



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> :  C07H	A2	(11) International Publication Number: WO 00/09525  (43) International Publication Date: 24 February 2000 (24.02.00)
<p>(21) International Application Number: PCT/US99/17712</p> <p>(22) International Filing Date: 3 August 1999 (03.08.99)</p> <p>(30) Priority Data: 60/095,212 3 August 1998 (03.08.98) US</p> <p>(71) Applicant (for all designated States except US): EAST CAROLINA UNIVERSITY [US/US]; 210 Spilman Building, Greenville, NC 27858 (US).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): NYCE, Jonathan, W. [US/US]; 59 Sayre Drive, Princeton, NJ 08540 (US).</p> <p>(74) Agent: AMZEL, Viviana; Arter &amp; Hadden, Suite 3400, 725 South Figueroa Street, Los Angeles, CA 90071 (US).</p>		<p>(81) Designated States: AU, CA, CN, MX, RU, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p><b>Published</b> <i>Without international search report and to be republished upon receipt of that report.</i></p>
<p>(54) Title: LOW ADENOSINE ANTI-SENSE OLIGONUCLEOTIDE AGENT, COMPOSITION, KIT AND TREATMENTS</p>		
<p>(57) Abstract</p> <p>A composition comprises a nucleic acid comprising an oligo anti-sense to a target such as polypeptide(s) associated with an ailment afflicting lung airways, genes and mRNAs encoding them, genomic and mRNA flanking regions, intron and exon borders and all regulatory and functionally related segments of the genes and mRNAs encoding the polypeptides, their salts and mixtures. Various formulations contain a requisite carrier, and optionally other additives and biologically active agents. The agent of the invention may be prepared by selecting a target gene(s), genomic flanking region(s), RNA(s) and/or polypeptide(s) associated with a disease(s) or condition(s) afflicting lung airways, obtaining the sequence of the mRNA(s) corresponding to the target gene(s) and/or genomic flanking region(s), and/or RNAs encoding the target polypeptide(s), selecting at least one segment of the mRNA which may be up to 60 % free of thymidine (T) and synthesizing one or more anti-sense oligonucleotide(s) to the mRNA segments which are free of adenosine (A) by substituting a universal base for A when present in the oligonucleotide. The agent may be prepared by selection of target nucleic acid sequences with GC running stretches, which have low T content, and by optionally replacing A in the anti-sense oligonucleotides with a AUniversal base@. The agent, composition and formulations are used for prophylactic, preventive and therapeutic treatment of ailments associated with impaired respiration, allergy(ies) and/or inflammation, such as pulmonary vasoconstriction, inflammation, allergies, asthma, impeded respiration, lung pain, cystic fibrosis, bronchoconstriction, pulmonary hypertension and bronchoconstriction, chronic bronchitis, emphysema, chronic obstructive pulmonary disease (COPD), acute respiratory distress syndrome (ARDS), ischemic conditions including ischemia itself, and cancers such as leukemias, lymphomas, carcinomas, and the like, e.g. colon cancer, breast cancer, pancreatic cancer, lung cancer, hepatocellular carcinoma, kidney cancer, melanoma, hepatic metastasis, etc., as well as all types of cancers with may metastasize or have metastasized to the lung(s), including breast and prostate cancer. The present treatment is suitable for administration in combination with other treatments, e.g. before, during and after other treatments, including radiation, chemotherapy, antibody therapy and surgery, among others. The present agent is effectively administered preventatively, prophylactically or therapeutically by itself for conditions without known therapies; or as a substitute for, or in conjunction with, other therapies exhibiting undesirable side effects. The treatment of this invention may be administered directly into the respiratory system of a subject, so that the agent has direct access to the airways and the lungs.</p>		

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Larvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon	KR	Republic of Korea	PL	Poland		
CN	China	KZ	Kazakstan	PT	Portugal		
CU	Cuba	LC	Saint Lucia	RO	Romania		
CZ	Czech Republic	LJ	Liechtenstein	RU	Russian Federation		
DE	Germany	LK	Sri Lanka	SD	Sudan		
DK	Denmark	LR	Liberia	SE	Sweden		
EE	Estonia			SG	Singapore		



## LOW ADENOSINE ANTI-SENSE OLIGONUCLEOTIDE AGENT, COMPOSITION, KIT & TREATMENTS

### BACKGROUND OF THE INVENTION

#### Field of the Invention

This application relates to an agent comprising anti-sense oligonucleotides of low or no adenosine content. These agents are suitable for the treatment of diseases associated with inflammation, impaired airways, including lung disease and diseases whose secondary effects afflict the lungs of a subject. Examples of these diseases are allergies, asthma, impeded respiration, pain, cystic fibrosis, and cancers such as leukemias, e.g. colon cancer, and the like. The present agent may be administered prophylactically or therapeutically in conjunction with other therapies, or may be utilized as a substitute for therapies that have significant, negative side effects.

#### Background of the Invention

Respiratory ailments, associated with a variety of diseases and conditions, are extremely common in the general population, and more so in certain ethnic groups, such as African Americans. In some cases they are accompanied by inflammation, which aggravates the condition of the lungs. Asthma, for example, is one of the most common diseases in industrialized countries. In the United States it accounts for about 1% of all health care costs. An alarming increase in both the prevalence and mortality of asthma over the past decade has been reported, and asthma is predicted to be the preeminent occupational lung disease in the next decade. While the increasing mortality of asthma in industrialized countries could be attributable to the increased reliance upon beta agonists in the treatment of this disease, the underlying causes of asthma remain poorly understood.

Anti-sense oligonucleotides have received considerable theoretical consideration as potential useful pharmacological agents in human disease. Their practical application in actual models of human disease, however, has been somewhat elusive. One important impediment to their effective application has been a difficulty in finding an appropriate route of administration to deliver them to their site of action. Many in vivo experiments were conducted by administering anti-sense oligonucleotides directly to specific regions of the brain. These applications, however, necessarily have limited clinical utility due to their invasive nature.

The systemic administration of anti-sense oligonucleotides also presents significant problems, not the least being an inherent difficulty in targeting disease-involved tissues. In contrast, the lung is an excellent target for the direct administration of anti-sense oligonucleotides, and provides a non-invasive and a tissue-specific route. The delivery of anti-sense agents to the lung has been relatively undeveloped.

Adenosine may constitute an important mediator in the lung for various diseases, including bronchial asthma. Its potential role was suggested by the finding that asthmatics respond favorably to aerosolized adenosine with marked bronchoconstriction whereas normal individuals do not. An asthmatic rabbit animal model, the dust mite allergic rabbit model for human asthma, responded in a similar fashion to aerosolized adenosine with marked bronchoconstriction whereas non-asthmatic rabbits showed no response. More recent work with this animal model suggested that adenosine-induced bronchoconstriction and bronchial hyperresponsiveness in asthma may be mediated primarily through the stimulation of adenosine receptors. Adenosine has also been shown to cause adverse effects, including death, when administered therapeutically for other diseases and conditions in subjects with previously undiagnosed hyper reactive airways.

A handful of medicaments have been available for the treatment of respiratory diseases and conditions, although in general they all have limitations. Theophylline, an important drug in the treatment of asthma, is a known adenosine receptor antagonist which was reported to eliminate adenosine-mediated bronchoconstriction in asthmatic rabbits. A selective adenosine A<sub>1</sub> receptor antagonist, 8-cyclopentyl-1, 3-dipropylxanthine (DPCPX) was also reported to inhibit adenosine-mediated bronchoconstriction and bronchial hyperresponsiveness in allergic rabbits. The therapeutic and preventative applications of currently available adenosine A<sub>1</sub> receptor-specific antagonists are, nevertheless, limited by their toxicity. Theophylline, for example, has been widely used in the treatment of asthma, but is associated with frequent, significant toxicity resulting from its narrow therapeutic dose range. DPCPX is far too toxic to be useful clinically. The fact that, despite decades of extensive research, no specific adenosine receptor antagonist is available for clinical use attests to the general toxicity of these agents.

Anti-sense oligonucleotides have received considerable theoretical consideration for their potential use as

pharmacological agents in human disease. Finding practical and effective applications of these agents in actual models of human disease, however, have been few and far between, particularly because they had to be administered in large doses. Another important consideration in the pharmacologic application of these molecules is their route of administration. Many in vivo applications have involved the direct administration of anti-sense oligonucleotides to limited regions of the brain. Such applications, however, have limited clinical utility due to their invasive nature.

The systemic administration of anti-sense oligonucleotides as pharmacological agents has been found to have also significant problems, not the least of which being a difficulty in targeting disease-involved tissues. That is, the necessary dilution of the anti-sense oligonucleotide in the circulatory system makes extremely difficult to attain a therapeutic dose at the target tissue by intravenous or oral administration. The bioavailability of orally administered anti-sense oligonucleotides is very low, of the order of less than about 5%.

There are presently no effective therapies for treating these ailments, or at least no therapies which are effective and devoid of significant detrimental side effects. Accordingly, there is still a need for an agent for the treatment of ailments afflicting the lung airways, including respiratory problems and inflammation, which is highly effective and producing minimal, or entirely devoid of, side effects.

### SUMMARY OF THE INVENTION

This invention relates to an agent which comprises an oligonucleotide (oligo) consisting essentially of less than about 15% adenosine (A), which is selected from the group consisting of anti-sense oligonucleotides to mRNAs corresponding to target genes, to genomic flanking regions selected from the group consisting of intron and exon borders, such as the 5' end, the 3' end and the juxta-section between coding and non-coding regions, and to all segments of mRNAs encoding polypeptides associated with ailments afflicting lung airways, combinations thereof, pharmaceutically acceptable salts thereof, and mixtures thereof. The mRNA(s), for example, encode polypeptide(s) such as transcription factors, stimulating and activating factors, interleukins, interleukin receptors, chemokines, chemokine receptors, endogenously produced specific and non-specific enzymes, immunoglobulins, antibody receptors, central nervous system (CNS) and peripheral nervous and non-nervous system receptors, CNS and peripheral nervous and non-nervous system peptide transmitters, adhesion molecules, defensins, growth factors, vasoactive peptides and receptors, and binding proteins; or those mRNA which correspond to an oncogene. The agents are provided in the form of specific compositions and formulations, with a carrier, and optionally with other therapeutic agents and additives which are typically used for administration by a specific route, e.g. into the respiratory system. The agent is also provided as a capsule or cartridge, and in the form of a kit.

This agent is suitable for the treatment of diseases and conditions associated with impaired respiration and inflammation, including lung diseases, ailments and conditions that have a negative effect on the lungs of a subject. Examples of diseases and conditions, which may be treated preventively, prophylactically and therapeutically with the agent of this invention, are pulmonary vasoconstriction, inflammation, allergies, asthma, impeded respiration, respiratory distress syndrome, pain, cystic fibrosis, pulmonary hypertension, pulmonary vasoconstriction, emphysema, chronic obstructive pulmonary disease (COPD), and cancers such as leukemias, lymphomas, carcinomas, and the like, e.g. colon cancer, breast cancer, lung cancer, pancreatic cancer, hepatocellular carcinoma, kidney cancer, melanoma, hepatic metastases, etc., as well as all types of cancers which may metastasize or have metastasized to the lung(s), including breast and prostate cancer. The present agent(s) is (are) also suitable for administration before, during and after other treatments, including radiation, chemotherapy, antibody therapy, phototherapy and cancer, and other types of surgery. Alternatively, the present agent may be effectively administered preventively, prophylactically or therapeutically, and in conjunction with other therapies, or by itself for conditions without known therapies or as a substitute for therapies that have significant negative side effects.

The composition of this invention may be administered by transdermal or systemic routes, including by, but not exclusively, oral, intracavitary, intranasal, intraanal, intravaginal, transdermal, intradermal, intrabuccal, intravenous, subcutaneous, intramuscular, intratumor, intraglandular, by inhalation, intraarterial, intravascular in general, into the ear, intracranial, intrathecal, intraorgan including via a shunt to, for example, the liver or other organs, by implantation and intraocular administration to a human or any other animal, including vertebrates, such as mammals. In a preferred embodiment, the present agents are administered directly into the respiratory

system of a subject, so that the agent has direct access to the lungs, in an amount effective to reduce or inhibit the effect in the lung of the targeted diseases or conditions.

Also part of this invention is a method of producing an anti-sense oligonucleotide consisting essentially of less than about 15% adenosine (A), by selecting a target including genes, genomic flanking regions, RNAs and polypeptide associated with an ailment afflicting the lung airways, obtaining the sequence of a mRNA(s) corresponding to the target gene(s) and/or their genomic flanking region(s) and/or the juxta-membrane regions thereof, and mRNA(s) encoding the target polypeptide(s), selecting at least one segment of the mRNA(s), and synthesizing one or more anti-sense oligonucleotide(s) to the selected mRNA segment(s), and substituting, if necessary, a universal base(s) for one or more A to reduce the proportion of A present in the oligonucleotide to less than 15%.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

This invention arose from a desire by the inventor to improve on his own prior discovery that anti-sense oligonucleotides (oligos) may be utilized therapeutically in the treatment of diseases or conditions which impair respiration, cause inflammation, constrict bronchial tissue or the lung airways, or otherwise impede normal breathing. The inventor reasoned that he could improve on his prior discovery that anti-sense oligos targeted to genes associated with such ailments could effectively treat and prevent the effects and symptomatology of such disease(s) or condition(s). The present invention is premised on the recent discovery by the inventor that oligonucleotides are metabolized in vivo to their deoxynucleotides. In the case of adenosine (A)-containing oligonucleotides, there is break down with release of deoxyadenosine which, in turn, activates adenosine receptors causing bronchoconstriction, inflammation and the like.

The present technology relies on the design of anti-sense oligos targeted to mRNAs associated with ailments involving lung airway pathology(ies), and on their modification to reduce the occurrence of undesirable side effects caused by their release of adenosine upon breakdown, while preserving their activity and efficacy for their intended purpose. In this manner, the inventor targets a specific gene to design one or more anti-sense oligonucleotide(s) (oligos) that selectively bind(s) to the corresponding mRNA, and then reduces, if necessary, their content of adenosine via substitution with universal base or an adenosine analog incapable of activating adenosine A<sub>1</sub>, A<sub>2a</sub>, or A<sub>3</sub> receptors. Based on his prior experience in the field, the inventor reasoned that in addition to downregulating@ specific genes, he could increase the effect of the agent(s) administered by either selecting segments of RNA that are devoid, or have a low content, of thymidine (T) or, alternatively, substitute one or more adenosine(s) present in the designed oligonucleotide(s) with other nucleotide bases, so called universal bases, which bind to thymidine but lack the ability to activate adenosine receptors and otherwise exercise the constricting effect of adenosine in the lungs, etc. Given that adenosine (A) is a nucleotide base complementary to thymidine (T), when a T appears in the RNA, the anti-sense oligo will have an A at the same position. For consistency's sake, all RNAs and oligonucleotides are represented in this patent by a single strand in the 5' to 3' direction, when read from left to right, although their complementary sequence(s) is (are) also encompassed within the four corners of the invention. In addition, all nucleotide bases and amino acids are represented utilizing the recommendations of the IUPAC-IUB Biochemical Nomenclature Commission, or by the known 3-letter code (for amino acids).

The method of the present invention may be used to treat ailments associated with reduced airway function in a subject, whatever its cause. The adenosine content of the anti-sense agent(s) of the invention have a reduced A content to prevent its liberation upon in vivo degradation of the agent(s). Examples of airway diseases that may be treated by the method of the present invention include cystic fibrosis, asthma, pulmonary hypertension and vasoconstriction, chronic obstructive pulmonary disease (COPD), chronic bronchitis, respiratory distress syndrome, lung cancer and lung metastatic cancers and other airway diseases, including those with inflammatory response.

Anti-sense oligos to the adenosine A<sub>1</sub>, A<sub>2a</sub>, A<sub>2b</sub>, and A<sub>3</sub> receptors, CCR3 (chemokine receptors), bradykinin 2B, CAM (vascular cell adhesion molecule), and eosinophil receptors, among others, have been shown to be effective in down-regulating the expression of their genes. Some of these act to alleviate the symptoms or reduce respiratory ailments and/or inflammation, for example, by down regulation@ of the adenosine A<sub>1</sub>, A<sub>2a</sub>, A<sub>2b</sub>, and/or A<sub>3</sub> receptors and CCR3, bradykinin 2B, VCAM (vascular cell adhesion molecule) and eosinophil receptors. These agents are preferably administered directly into the respiratory system, e.g., by

inhalation or other means, so that they may reach the lungs without widespread systemic dissemination. This permits the use of substantially lower doses of the agent of the invention as compared with those administered by the prior art, systemically or by other generalized routes and, consequently, reduce undesirable side effects resulting from the agent's widespread distribution in the body. The agent(s) of this invention has (have) been shown to reduce the amount of receptor protein expressed by the tissue. These agents, thus, rather than merely interacting with their targets, e.g. a receptor, lower the number of target proteins that other drugs may interact with. In this manner, the present agent(s) afford(s) extremely high efficacy with low toxicity.

The adenosine receptors discussed above are mere examples of the high power of the inventor's technology. In fact, a large number of genes may be targeted in a similar manner by the present agent(s), to reduce or down-regulate protein expression. By means of example, if the target disease or condition is one associated with impeded or reduced breathing, bronchoconstriction, chronic bronchitis, pulmonary bronchoconstriction and/or hypertension, chronic obstructive pulmonary disease (COPD), allergy, asthma, cystic fibrosis, respiratory distress syndrome, cancers, which either directly or by metastasis afflict the lung, the present method may be applied to a list of potential target mRNAs, which includes the targets listed in Table 1 below, among others.

**Table 1: Pulmonary Disease or Condition (Asthma/Inflammation) Targets**

Nf6B Transcription Factor	Interleukin-8 Receptor (IL-8 R)
Interleukin-5 Receptor (IL-5R)	Interleukin-4 Receptor (IL-4R)
Interleukin-3 Receptor (IL-3R)	Interleukin-1beta (IL-1beta)
Interleukin-1 $\beta$ Receptor (IL-1beta R)	Eotaxin
Tryptase	Major Basic Protein
$\beta$ 2-adrenergic Receptor Kinase	Endothelin Receptor A
Endothelin Receptor B	Preproendothelin
Bradykinin B2 Receptor (B2BR)	IgE (High Affinity Receptor)
Interleukin-1 (IL-1)	Interleukin 1 Receptor (IL-1 R)
Interleukin-9 (IL-9)	Interleukin-9 Receptor (IL-9 R)
Interleukin-11 (IL-11)	Interleukin-11 Receptor (IL-11 R)
Inducible Nitric Oxide Synthase	Cyclooxygenase (COX)
Intracellular Adhesion Molecule 1 (ICAM-1)	Vascular Cellular Adhesion Molecule (VCAM)
Rantes	Endothelial Leukocyte Adhesion Molecule (ELAM-1)
Cyclooxygenase-2 (COX-2)	GM-CSF, Endothelin-1
Monocyte Activating Factor	Neutrophil Chemotactic Factor
Neutrophil Elastase	Defensin 1,2,3
Muscarinic Acetylcholine Receptors	Platelet Activating Factor
Tumor Necrosis Factor $\alpha$	5-lipoxygenase
Phosphodiesterase IV	Substance P
Substance P Receptor	Histamine Receptor
Chymase	CCR-1 CC Chemokine Receptor
Interleukin-2 (IL-2)	Interleukin-4 (IL-4)
Interleukin-12 (IL-12)	Interleukin-5 (IL-5)
Interleukin-6 (IL-6)	Interleukin-7 (IL-7)
Interleukin-8 (IL-8)	Interleukin-12 Receptor (IL-12R)
Interleukin-7 Receptor (IL-7R)	Interleukin-1 (IL-1)
Interleukin-14 Receptor (IL-14R)	Interleukin-14
CCR-2 CC Chemokine Receptor	CCR-3 CC Chemokine Receptor
CCR-4 CC Chemokine Receptor	CCR-5 CC Chemokine Receptor
Prostanoid Receptors	GATA-3 Transcription Factor
Neutrophil Adherence Receptor	MAP Kinase
Interleukin-15 (IL-15)	Interleukin-15 Receptor (IL-15R)
Interleukin-11 (IL-11)	Interleukin-11 Receptor (IL-11R)
NFAT Transcription Factors	STAT 4
MIP-1 $\alpha$	MCP-2
MCP-3	MCP-4
Cyclophillin (A, B, etc.)	Phospholipase A2
Basic Fibroblast Growth Factor	Metalloproteinase

EPI-109

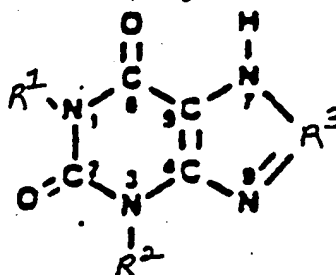
5

CSBP/p38 MAP Kinase	Tryptase Receptor
PDG2	Interleukin-3 (IL-3)
Interleukin-10 (IL-10)	Cyclosporin A - Binding Protein
FK506-Binding Protein	$\alpha 4\beta 1$ Selectin
Fibronectin	$\alpha 4\beta 7$ Selectin
cMad CAM-1	LFA-1 (CD11a/CD18)
PECAM-1	LFA-1 Selectin
C3bi	PSGL-1
E-Selectin	P-Selectin
CD-34	L-Selectin
p150,95	Mac-1 (CD11b/CD18)
Fucosyl transferase	VLA-4
CD-18/CD11a	CD11b/CD18
ICAM2 and ICAM3	C5a
CCR3 (Eotaxin Receptor)	CCR1, CCR2, CCR4, CCR5
LTB-4	AP-1 Transcription Factor
Protein kinase C	Cysteinyl Leukotriene Receptor
Tachykinin Receptors (tach R)	I $\kappa$ B Kinase 1 & 2
Interleukin-2 Receptor (IL-2R)	(e.g., Substance P, NK-1 & NK-3 Receptors)
STAT 6	c-mas
NF-Interleukin-6 (NF-IL-6)	Interleukin-10 Receptor (IL-10R)
Interleukin-3 (IL-3)	Interleukin-2 Receptor (IL-2R)
Interleukin-13 (IL-13)	Interleukin-12 Receptor (IL-12R)
Interleukin-14 (IL-14)	Interleukin-6 Receptor (IL-6R)
Interleukin-16 (IL-16)	Interleukin-13 Receptor (IL-13R)
Medullasin	Interleukin-16 Receptor (IL-16R)
Adenosine A <sub>1</sub> Receptor (A <sub>1</sub> R)	Tryptase-I
Adenosine A <sub>2b</sub> Receptor (A <sub>2b</sub> R)	Adenosine A <sub>3</sub> Receptor (A <sub>3</sub> R)
$\beta$ Tryptase	
Adenosine A <sub>2a</sub> Receptor (A <sub>2a</sub> R)	IgE Receptor $\beta$ Subunit (IgE R $\beta$ )
Fc-epsilon receptor CD23 antigen	IgE Receptor $\alpha$ Subunit (IgE R $\alpha$ )
IgE Receptor Fc Epsilon Receptor (IgERFc $\zeta$ R)	Substance P Receptor
Histidine decarboxylase	Tryptase-1
Prostaglandin D Synthase	Eosinophil Cationic Protein
Eosinophil Derived Neurotoxin	Eosinophil Peroxidase
Endothelial Nitric Oxide Synthase	Endothelial Monocyte Activating Factor
Neutrophil Oxidase Factor	Cathepsin G
Macrophage Inflammatory Protein-1-	Interleukin-8 Receptor $\alpha$ Subunit (IL-8 R $\alpha$ )
Alpha/Rantes Receptor	Substance P
Endothelin Receptor ET-B	Endothelin ETA Receptor

Examples of other targets are 5-lipoxygenase,  $\alpha$ -Rantes receptor, Cathepsin G, CCR-1 CC Chemokine receptor, CCR-1 CC Chemokine receptor, CCR-5 CC Chemokine receptor, CD-11-CD11a, c-Mas, Endothelial Nitric Oxide Synthase, Endothelial receptor ET-B, Endothelin 1, Eosinophil Cationic Protein, Eosinophil Derived Neurotoxin, Fc-e receptor II (CD 23 Antigen), Histidine Decarboxylase, Interleukin 10 (IL-10), IL-10 receptor, IL-11 receptor, IL-12, IL-12 receptor, IL-13, IL-13 receptor, IL-14 and its receptor, IL-15 and its receptor, IL-16 and its receptor, IL-6 and its receptor, IL-7 and its receptor, Intracellular Adhesion Molecule -2 (ICAM-2), ICAM-3, Medullasin, Neurokinin-3 receptor (NK-3 R), Neutrophil Oxidase Factor, Platelet Activating Factor receptor, Prostaglandin D Synthase, Protein Kinase c, P-Selectin Glycoprotein Ligand 1 (PSGL-1), Tryptase Activated receptor, IL-2 and its receptor, IL-3 and its receptor, IL-4 and its receptor, IL-5 and its receptor, IL-8 and its receptor, IL-9 and its receptor, Intracellular adhesion Molecule-1, Leukocyte Adhesion Glycoprotein, Leukotriene C-4 Synthase, Major Basic Protein, MCP-3, Monocyte Activating Factor, Muscarinic Acetylcholine receptors, Neurokinin-1 Receptor, Neutrophil Chemotactic Factor, Neutrophil Elastase, NF $\kappa$ B, Phosphodiesterase IV, Prostaglandin Receptor, P-selectin, Rantes, Stat-1, Stat-2, Stat-3, Substance P and its receptor, Tryptase, Tumor Necrosis Factor A, Vascular Cellular Adhesion Molecule, AP-1 Transcription Factor, Basic Fibroblast Growth Factor, C5a, CCR-2 CC Chemokine Receptor, CSBP-p38 MAP Kinase,

Cyclooxygenase-2 (COX-2), Cyclophilin (A, B, C, and the rest), Cyclosporin A Binding Protein, Cysteinyl Leukotriene Receptor, E-Selectin, Fibronectin, Fusosyl Transferase, GATAS-3 Transcription Factor, Granulocyte-Macrophage Stimulating Factor (GM-CSF), Histamine Receptor, IKB Kinase 1 and 2, interleukin 7, L-Selectin, Mac-1 (CD11b and CD18), Mad CAM-1, Map Kinase, MCP-4, Metalloproteinase, MIP-1a, Neutrophil Adherence Receptors, NFAT Transcription Factors, NF-Interleukin-6 (NF-IL-6), Pecam-1, Phospholipase A2, Prostanoid Receptors, Stat-4, Stat-6, VLA-4, and others.

The oligos of this invention may be obtained by first selecting fragments of a target nucleic acid having at least 4 contiguous nucleic acids selected from the group consisting of G and C, and then obtaining a first oligonucleotide 4 to 60 nucleotides long which comprises the selected fragment and has a C and G nucleic acid content of up to and including about 15%. The latter step may be conducted by obtaining a second oligonucleotide 4 to 60 nucleotides long comprising a sequence which is anti-sense to the selected fragment, the second oligonucleotide having an adenosine base content of up to and including about 15%. This method may also comprise, when the selected fragment comprises at least one thymidine base, substituting an adenosine base in the corresponding nucleotide of the anti-sense fragment with a universal base selected from the group consisting of heteroaromatic bases which bind to a thymidine base but have antagonist activity and less than about 0.3 of the adenosine base agonist activity at the adenosine A<sub>1</sub>, A<sub>2b</sub> and A<sub>3</sub> receptors, and heteroaromatic bases which have no activity or have an agonist activity at the adenosine A<sub>2a</sub> receptor. The analogue heteroaromatic bases may be selected from all pyrimidines and purines, which may be substituted by O, halo, NH<sub>2</sub>, SH, SO, SO<sub>2</sub>, SO<sub>3</sub>, COOH and branched and fused primary and secondary amino, alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, alkoxy, alkenoxy, acyl, cycloacyl, arylacyl, alkynoxy, cycloalkoxy, aroyl, arylthio, arylsulfoxyl, halocycloalkyl, alkylcycloalkyl, alkenylcycloalkyl, alkynylcycloalkyl, haloaryl, alkylaryl, alkenylaryl, alkynylaryl, arylalkyl, arylalkenyl, arylalkynyl, arylcycloalkyl, which may be further substituted by O, halo, NH<sub>2</sub>, primary, secondary and tertiary amine, SH, SO, SO<sub>2</sub>, SO<sub>3</sub>, cycloalkyl, heterocycloalkyl and heteroaryl. The pyrimidines and purines may be substituted at all positions as is known in the art, but preferred are those which are substituted at positions 1, 2, 3, 4, 7 and/or 8. More preferred are pyrimidines and purines such as theophylline, caffeine, dyphylline, etophylline, acephylline piperazine, bamifylline, enprofylline and xantine having the chemical formula



wherein R<sup>1</sup> and R<sup>2</sup> are independently H, alkyl, alkenyl or alkynyl and R<sup>3</sup> is H, aryl, dicycloalkyl, dicycloalkenyl, dicycloalkynyl, cycloalkyl, cycloalkenyl, cycloalkynyl, O-cycloalkyl, O-cycloalkenyl, O-cycloalkynyl, NH<sub>2</sub>-alkylamino-ketoxyalkyloxy-aryl, mono and dialkylaminoalkyl-N-alkylamino-SO<sub>2</sub> aryl, among others.

The inventor reduced the adenosine content of the anti-sense oligos corresponding to the thymidines (T) present in the target RNA to less than about 15%, or fully eliminated A from the oligonucleotide sequence as a means for preventing their breakdown products from freeing adenosine into the lung tissue environment and, thereby, aggravating the subject's ailment and/or countering the beneficial effect of the administered agent.

By means of example, the NF6B transcription factor may be selected as a target, and its mRNA or DNA searched for low thymidine (T) or desthymidine (desT) fragments. Only desT segments of the mRNA or DNA are selected which, in turn, will produce desA anti-sense as their complementary strand. When a number of RNA desT segments are found, the sequence of the anti-sense segments may be deduced. Typically, about 10 to 30 and even larger numbers of desA anti-sense sequences may be obtained. These anti-sense sequences may include some or all desA anti-sense oligonucleotide sequences corresponding to desT segments of the mRNA of the target, such as anyone of those shown in Table 1 above or Table 2 below. When this occurs, the anti-sense oligonucleotides found are said to be 100% A-free. For each of the original desA anti-sense oligonucleotide sequences corresponding to the target gene, e.g. the NF6B transcription factor, typically about 10 to 30 sequences

may be found within the target gene or RNA which have a low content of thymidine (RNA). In accordance with this invention, the selected fragment sequences may also contain a small number of thymidine (RNA) nucleotides within the secondary or tertiary or quaternary sequences. In some cases, a large adenosine content may suffice to render the anti-sense oligonucleotide less active or even inactive against the target. In accordance with this invention, these so called A non-fully desA sequences may preferably have a content of adenosine of less than about 15%, more preferably less than about 10%, and still more preferably less than 5%, and some even less than 2% adenosine. In some instances a higher content of adenosine is acceptable and the oligonucleotides are still active, particularly where the adenosine nucleotide may be Afixed@ or replaced with a AUniversal@ base that may base-pair with similar or equal affinity to two or more of the four nucleotide present in natural DNA: A, G, C, and T. A universal base is defined in this patent as any compound, more commonly an adenosine analogue, having the capacity to hybridize to thymidine, preferably having substantially reduced, or substantially lacking, ability to bind adenosine receptors. Alternatively, adenosine analogs which do not activate adenosine receptors, such as the adenosine A<sub>1</sub>, A<sub>2</sub>, and/or A<sub>3</sub> receptors, most preferably A<sub>1</sub> receptors, may be used. One example of a universal base is  $\alpha$ -deoxyribofuranosol-(5-nitroindole), and an artisan will know how to select others. This Afixing@ step generates a further novel sequence, different from the one found in nature, that permits the anti-sense oligonucleotide to bind, preferably equally well, with the target RNA. An example of a universal base is 2-deoxyribosyl-(5-nitroindole). Other examples of universal bases are 3-nitropyrrole-2'-deoxynucleoside, 5-nitroindole, 2-deoxyribosyl-(5-nitroindole), 2-deoxyribofuranosyl-(5-nitroindole), 2'-deoxyinosine, 2'-deoxynebularine, 6H, 8H-3,4-dihydropyrimido [4,5-c] oxazine-7-one and 2-amino-6-methoxyaminopurine. In addition to the above, Universal bases which may be substituted for any other base although with somewhat reduced hybridization potential, include 3-nitropyrrole 2'-deoxynucleoside 2-deoxyribofuranosyl-(5-nitroindole), 2'-deoxyinosine and 2'-deoxynebularine (Glen Research, Sterling, VA). More specific mismatch repairs may be made using "P" nucleotide, 6H, 8H-3, 4-dihydropyrimido[4,5-c] [1,2] oxazin-7-one, which base pairs with either guanine (G) or adenine (A) and "K" nucleotide, 2-amino-6-methoxyaminopurine, which base pairs with either cytidine (C) or thymidine (T), among others. Others which are known in the art are also suitable. See, for example, Loakes, D. and Brown, D. M., Nucl. Acids Res. 22:4039-4043 (1994); Ohtsuka, E. et al., J. Biol. Chem. 260(5):2605-2608 (1985); Lin, P.K.T. and Brown, D. M., Nucleic Acids Res. 20(19):5149-5152 (1992); Nichols, R. et al., Nature 369(6480): 492-493 (1994); Rahmon, M. S. and Humayun, N. Z., Mutation Research 377 (2): 263-8 (1997); Amosova, O., et al., Nucleic Acids Res. 25 (10): 1930-1934 (1997); Loakes D. & Brown, D. M., Nucleic Acids Res. 22 (20): 4039-4043 (1994), the entire sections relating to universal bases and their preparation and use in nucleic acid binding is incorporated herein by reference.

When non-fully desT sequences are found in the naturally occurring target, they typically are selected so that about 1 to 3 universal base substitutions will suffice to obtain a 100% A desA@ anti-sense oligonucleotide. Thus, the present method provides either anti-sense oligonucleotides to different targets which are low in, or devoid of, A content, as well as anti-sense oligonucleotides where one or more adenosine nucleotides, e. g. about 1 to 3, or more, may be Afixed@ by replacement with a AUniversal@ base. Universal bases are known in the art and need not be listed herein. An artisan will know which bases may act as universal bases, and replace them for A.

The present approach to the design of anti-sense oligonucleotide approach is also applicable to a variety of other diseases or conditions, including other inflammatory diseases, such as cystic fibrosis, chronic obstructive pulmonary disease, chronic bronchitis, pulmonary hypertension, cancers, including those which metastasize to the lung, such as breast cancer, colon cancer, respiratory distress syndrome, prostate cancer, pancreatic cancer, kidney cancer, lymphomas, melanomas, hepatocellular carcinomas, etc.

As used herein, the term "treat" or "treating" asthma or other respiratory and inflammatory conditions or diseases refers to a treatment which decreases the likelihood that the subject administered such treatment will manifest symptoms of a respiratory or inflammatory lung disease or other lung conditions. The term "down-regulate" refers to inducing a decrease in production, secretion or availability (and thus a decrease in concentration) of the targeted intracellular protein.

The present invention is concerned primarily with the treatment of vertebrates, and within this group, of mammals, including human and non-human simians, wild and domesticated animals, marine and land animals, household pets, and zoo animals, for example, felines, canines, equines, pachiderms, cetaceans, and still more preferably to human subjects. One particularly suitable application of this technology is for veterinary purposes,

and includes all types of small and large animals in the care of a veterinarian, including wild animals, marine animals, household animals, zoo animals, and the like. Targeted genes and proteins are preferably mammalian, and the sequences targeted are preferably of the same species as the subject being treated. Although in many instances, targets of a different species are also suitable, particularly those segments of the target RNA or gene that display greater than about 45% homology, preferably greater than about 85% homology, still more preferably greater than about 95% homology, with the recipient's sequence. A preferable group of agents is composed of des-A anti-sense oligos. Another preferred group is composed of non-fully desA oligonucleotides, where one or more adenosine bases are replaced with universal bases.

The terms "anti-sense" oligonucleotides generally refers to small, synthetic oligonucleotides, resembling single-stranded DNA, which in this patent are applied to the inhibition of gene expression by inhibition of a target messenger RNA (mRNA). See, Milligan, J. F. et al., *J. Med. Chem.* 36(14), 1923-1937 (1993), the relevant portion of which is hereby incorporated in its entirety by reference. The present agents inhibit gene expression of target genes, such as those of the adenosine A<sub>1</sub>, A<sub>2a</sub>, A<sub>2b</sub>, or A<sub>3</sub> receptors, CCR3 (chemical receptor 320, also known as the eotaxin receptor), VCAM (vascular cell adhesion molecule), eosinophil receptor, bradykinin 2B receptor, and many others listed in Table 1 above. This is generally attained by hybridization of the anti-sense oligonucleotides to coding (sense) sequences of a targeted messenger RNA (mRNA), as is known in the art. The exogenously administered agents of the invention decrease the levels of mRNA and protein encoded by the target gene and/or cause changes in the growth characteristics or shapes of the thus treated cells. See, Milligan et al. (1993); Helene, C. and Toulme, J. *Biochim. Biophys. Acta* 1049, 99-125 (1990); Cohen, J. S. D., Ed., *Oligodeoxynucleotides as Anti-sense Inhibitors of Gene Expression*; CRC Press: Boca Raton, FL (1987), the relevant portion of which is hereby incorporated in its entirety by reference. As used herein, "anti-sense oligonucleotide" is generally a short sequence of synthetic nucleotide that (1) hybridizes to any segment of a mRNA encoding a targeted protein under appropriate hybridization conditions, and which (2) upon hybridization causes a decrease in gene expression of the targeted protein.

The terms Ades-adenosine@ (desA) and Ades-thymidine@ (desT) refer to oligonucleotides substantially lacking either adenosine (desA) or thymidine (desT). In some instances, the des T sequences are naturally occurring, and in others they may result from substitution of an undesirable nucleotide (A) by another one lacking its undesirable activity. In the present context, the substitution is generally accomplished by substitution of A with a Auniversal base@, as is known in the art.

The mRNA sequence of the targeted protein may be derived from the nucleotide sequence of the gene expressing the protein. For example, the sequence of the genomic human adenosine A<sub>1</sub> receptor and that of the rat and human adenosine A<sub>3</sub> receptors are known. See, US Pat. No. 5,320,962; Zhou, F., et al., *Proc. Nat'l Acad. Sci. (USA)* 89 :7432 (1992); Jacobson, M.A., et al., U.K. Pat. Appl. No. 9304582.1. The sequence of the adenosine A<sub>2b</sub> receptor gene is also known. See, Salvatore, C. A., Luneau, C. J., Johnson, R. G. and Jacobson, M., *Genomics* (1995), the relevant portion of which is hereby incorporated in its entirety by reference. The sequences of many of the exemplary target genes are also known. See, GenBank, NIH. The sequences of those genes whose sequences are not yet available may be obtained by isolating the target segments applying technology known in the art. Once the sequence of the gene, its RNA and/or the protein are known, an anti-sense oligonucleotides may be produced according to this invention as described above to reduce the production of the targeted protein in accordance with standard techniques.

In one aspect of this invention, the anti-sense oligonucleotide has a sequence which specifically binds to a portion or segment of an mRNA molecule which encodes a protein associated with a disease or condition associated with impeded breathing, lung inflammation, airway obstruction, bronchitis, and the like. One effect of this binding is to reduce or even prevent the translation of the corresponding mRNA and, thereby, reduce the available amount of target protein in the subject's lung.

In one preferred embodiment of this invention, the phosphodiester residues of the anti-sense oligonucleotide are modified or substituted. Chemical analogs of oligonucleotides with modified or substituted phosphodiester residues, e.g., to the methylphosphonate, the phosphotriester, the phosphorothioate, the phosphorodithioate, or the phosphoramidate, which increase the in vivo stability of the oligonucleotide are particularly preferred. The naturally occurring phosphodiester linkages of oligonucleotides are susceptible to some degree of degradation by cellular nucleases. Many of the residues proposed herein, on the contrary, are highly resistant to nuclease degradation. See Milligan et al., and Cohen, J. S. D., *supra*. In another preferred



embodiment of the invention, the oligonucleotides may be protected from degradation by adding a "3'-end cap" by which nuclease-resistant linkages are substituted for phosphodiester linkages at the 3' end of the oligonucleotide. See, Tidd, D. M. and Warenus, H.M., *Be. J. Cancer* 60: 343-350 (1989); Shaw, J.P. et al., *Nucleic Acids Res.* 19: 747-750 (1991), the relevant section of which are incorporated in their entireties herein by reference. Phosphoramidates, phosphorothioates, and methylphosphonate linkages all function adequately in this manner for the purposes of this invention. The more extensive the modification of the phosphodiester backbone the more stable the resulting agent, and in many instances the higher their RNA affinity and cellular permeation. See Milligan, et al., *supra*. Thus, the number of residues which may be modified or substituted will vary depending on the need, target, and route of administration, and may be from 1 to all the residues, to any number in between. Many different methods for replacing the entire phosphodiester backbone with novel linkages are known. See, Millikan et al, *supra*. Preferred backbone analogue residues include phosphorothioate, methylphosphonate, phosphotriester, thioformacetal, phosphorodithioate, phosphoramidate, formacetal boranophosphate, 3'-thioformacetal, 5'-thioether, carbonate, 5'-N-carbamate, sulfate, sulfonate, sulfamate, sulfonamide, sulfone, sulfite, 2'-O methyl, sulfoxide, sulfide, hydroxylamine, methylene(methylimino) (MMI), and methyleneoxy(methylimino) (MOMI) residues. Phosphorothioate and methylphosphonate-modified oligonucleotides are particularly preferred due to their availability through automated oligonucleotide synthesis. See, Millikan et al, *supra*. Where appropriate, the agent of this invention may be administered in the form of their pharmaceutically acceptable salts, or as a mixture of the anti-sense oligonucleotide and its salt. In another embodiment of this invention, a mixture of different anti-sense oligonucleotides or their pharmaceutically acceptable salts is administered.

The agents of this invention have the capacity to attenuate the expression of one target mRNA and/or to enhance or attenuate the activity of one pathway. By means of example, the present method may be practiced by identifying all possible deoxyribonucleotide segments which are low in thymidine (T) or deoxynucleotide segments low in adenosine (A) of about 7 or more mononucleotides, preferably up to about 60 mononucleotides, more preferably about 10 to about 36 mononucleotides, and still more preferably about 12 to about 21 mononucleotides, in a target mRNA or a gene, respectively. This may be attained by searching for mononucleotide segments within a target sequence which are low in, or lack thymidine (RNA), a nucleotide which is complementary to adenosine, or that are low in adenosine (gene), that are 7 or more nucleotides long. In most cases, this search typically results in about 10 to 30 such sequences, i. e. naturally lacking or having less than about 40% adenosine, anti-sense oligonucleotides of varying lengths for a typical target mRNA of average length, i. e., about 1800 nucleotides long. Those with high content of T or A, respectively, may be fixed by substitution of a universal base for one or more As.

The agent(s) of this invention may be of any suitable length, including but not limited to, about 7 to about 60 nucleotides long, preferably about 12 to about 45, more preferably up to about 30 nucleotides long, and still more preferably up to about 21, although they may be of other lengths as well, depending on the particular target and the mode of delivery. The agent(s) of the invention may be directed to any and all segments of a target RNA. One preferred group of agent(s) includes those directed to an mRNA region containing a junction between an intron and an exon. Where the agent is directed to an intron/exon junction, it may either entirely overlie the junction or it may be sufficiently close to the junction to inhibit the splicing-out of the intervening exon during processing of precursor mRNA to mature mRNA, e.g. with the 3' or 5' terminus of the anti-sense oligonucleotide being positioned within about, for example, within about 2 to 10, preferably about 3 to 5, nucleotide of the intron/exon junction. Also preferred are anti-sense oligonucleotides which overlap the initiation codon, and those near the 5' and 3' termini of the coding region.

Table 2 below provides a selected number of targets to which the agents of the invention are effectively applied. Others, however, may also be targeted.

**Table 2: Cancer Targets**

Transforming Oncogenes	Therapy Targets
ras	thymidylate synthetase
src	thymidylate synthetase
myc	dihydrofolate reductase
bcl-2	thymidine kinase
	deoxycytidine kinase
	ribonucleotide reductase

A group of preferred targets for the treatment of cancer are genes associated with any of different types of cancers, or those generally known to be associated with malignancies, whether they are regulatory or involved in the production of RNA and/or proteins. Examples are transforming oncogenes, including, but not limited to, ras, src, myc, and bcl-2, among others. Other targets are those to which present cancer chemotherapeutic agents are directed to, such as various enzymes, primarily, although not exclusively, thymidylate synthetase, dihydrofolate reductase, thymidine kinase, deoxycytidine kinase, ribonucleotide reductase, and the like.

The present technology is particularly useful in the treatment of cancer ailments given that traditional cancer therapies are fraught with the unresolved problem of selectively killing cancer cells while preserving normal living cells from the devastating effects of treatments such as chemotherapy, radiotherapy, and the like. The present technology provides the ability of selectively attenuating or enhancing a desired pathway or target. This approach provides a significant advantage over standard treatments of cancer because it permits the selection of a pathway, including primary, secondary and possibly tertiary targets, which are not generally expressed simultaneously in normal cells. Thus, the present agent may be administered to a subject to cause a selective increase in toxicity within tumor cells that, for instance, express all three targets while normal cells that may express only one or two of the targets will be significantly less affected or even spared.

A group of preferred targets for the treatment of cancers are genes associated with different types of cancers, or those generally known to be associated with malignancies, whether they are regulatory or involved in the production of RNA and/or proteins. Examples are transforming oncogenes, including, but not limited to, ras, src, myc, and bcl-2, among others. Other targets are those to which present cancer chemotherapeutic agents are directed to, such as various enzymes, primarily, although not exclusively, thymidylate synthetase, dihydrofolate reductase, thymidine kinase, deoxycytidine kinase, ribonucleotide reductase, and the like.

In one embodiment, at least one of the mRNAs to which the MTA oligo of the invention is targeted encodes a protein such as transcription factors, stimulating and activating factors, intracellular and extracellular receptors and peptide transmitters in general, interleukins, interleukin receptors, chemokines, chemokine receptors, endogenously produced specific and non-specific enzymes, immunoglobulins, antibody receptors, central nervous system (CNS) and peripheral nervous and non-nervous system receptors, CNS and peripheral nervous and non-nervous system peptide transmitters, adhesion molecules, defensins, growth factors, vasoactive peptides and receptors, and binding proteins, among others; or the mRNA is corresponding to an oncogene and other genes associated with various diseases or conditions.

Examples of target proteins are eotaxin, major basic protein, preproendothelin, eosinophil cationic protein, P-selectin, STAT 4, MIP-1 $\alpha$ , MCP-2, MCP-3, MCP-4, STAT 6, c-mas, NF-IL-6, cyclophilins, PDG2, cyclosporin A-binding protein, FK5-binding protein, fibronectin, LFA-1 (CD11a/CD18), PECAM-1, C3bi, PSGL-1, CD-34, substance P, p150,95, Mac-1 (CD11b/CD18), VLA-4, CD-18/CD11a, CD11b/CD18, C5a, CCR1, CCR2, CCR4, CCR5, and LTB-4, among others. Others are, however, suitable, as well.

In another embodiment, at least one of the mRNAs to which the MTA oligo is targeted encodes intracellular and extracellular receptors and peptide transmitters such as sympathomimetic receptors, parasympathetic receptors, GABA receptors, adenosine receptors, bradykinin receptors, insulin receptors, glucagon receptors, prostaglandin receptors, thyroid receptors, androgen receptors, anabolic receptors, estrogen receptors, progesterone receptors, receptors associated with the coagulation cascade, adenohipophyseal receptors,

adenohypophyseal peptide transmitters, and histamine receptors (HisR), among others. However others are also contemplated.

The encoded sympathomimetic receptors and parasympathomimetic receptors include acetylcholinesterase receptors (AcChaseR) acetylcholine receptors (AcChR), atropine receptors, muscarinic receptors, epinephrine receptors (EpiR), dopamine receptors (DOPAR), and norepinephrine receptors (NEpiR), among others. Further examples of encoded receptors are adenosine A<sub>1</sub> receptor, adenosine A<sub>2B</sub> receptor, adenosine A<sub>3</sub> receptor, endothelin receptor A, endothelin receptor B, IgE high affinity receptor, muscarinic acetylcholine receptors, substance P receptor, histamine receptor, CCR-1 CC chemokine receptor, CCR-2 CC chemokine receptor, CCR-3 CC chemokine receptor (Eotaxin Receptor), interleukin-1 $\beta$  receptor (IL-1 $\beta$ R), interleukin-1 receptor (IL-1R), interleukin-1 $\beta$  receptor (IL-1 $\beta$ R), interleukin-3 receptor (IL-3R), CCR-4 CC chemokine receptor, cysteinyl leukotriene receptors, prostanoid receptors, GATA-3 transcription factor receptor, interleukin-1 receptor (IL-1R), interleukin-4 receptor (IL-4R), interleukin-5 receptor (IL-5R), interleukin-8 receptor (IL-8R), interleukin-9 receptor (IL-9R), interleukin-11 receptor (IL-11R), bradykinin B2 receptor, sympathomimetic receptors, parasympathomimetic receptors, GABA receptors, adenosine receptors, bradykinin receptors, insulin receptors, glucagon receptors, prostaglandin receptors, thyroid receptors, androgen receptors, anabolic receptors, estrogen receptors, progesterone receptors, receptors associated with the coagulation cascade, adenohypophyseal receptors, and histamine receptors (HisR). Others are also contemplated even though not listed herein.

The encoded enzymes for development of the MTA oligos of the invention include synthetases, kinases, oxidases, phosphatases, reductases, polysaccharide, triglyceride, and protein hydrolases, esterases, elastases, and polysaccharide, triglyceride, lipid, and protein synthases, among others. Examples of target enzymes are trypase, inducible nitric oxide synthase, cyclooxygenase (Cox), MAP kinase, eosinophil peroxidase,  $\beta$ 2-adrenergic receptor kinase, leukotriene c-4 synthase, 5-lipoxygenase, phosphodiesterase IV, metalloproteinase, trypase, CSBP/p38 MAP kinase, neutrophil elastase, phospholipase A2, cyclooxygenase 2 (Cox-2), fucosyl transferase, chymase, protein kinase C, thymidylate synthetase, dihydrofolate reductase, thymidine kinase, deoxycytidine kinase, and ribonucleotide reductase, among others. Any enzyme associated with a disease or condition, however, is suitable as a target for this invention.

Suitable encoded factors for application of this invention are, among others, NF $\kappa$ B transcription factor, granulocyte macrophage colony stimulating factor (GM-CSF), AP-1 transcription factor, GATA-3 transcription factor, monocyte activating factor, neutrophil chemotactic factor, granulocyte/macrophage colony-stimulating-factor (G-CSF), NFAT transcription factors, platelet activating factor, tumor necrosis factor  $\alpha$  (TNF  $\alpha$ ), and basic fibroblast growth factor (BFGF). Additional factors are also within the invention even though not specifically mentioned.

Suitable adhesion molecules for use with this invention include intracellular adhesion molecules 1 (ICAM-1), 2 (ICAM-2) and 3 (ICAM-3), vascular cellular adhesion molecule (VCAM), endothelial leukocyte adhesion molecule-1 (ELAM-1), neutrophil adherence receptor, mad CAM-1, and the like. Other known and unknown factors (at this time) may also be targeted herein.

Among the cytokines, lymphokines and chemokines preferred are interleukin-1 (IL-1), interleukin-1 $\beta$  (IL-1 $\beta$ ), interleukin-3 (IL-3), interleukin-4 (IL-4), interleukin-5 (IL-5), interleukin-8 (IL-8), interleukin-9 (IL-9), interleukin-11 (IL-11), CCR-5 CC chemokine, and Rantes. Others, however, may also be targeted, as they are known to be involved in specific diseases or conditions to be treated, or for their generic activities, such as inflammation.

Examples of defensins for the practice of this invention are defensin 1, defensin 2, and defensin 3, and of selectins are  $\alpha$ 4 $\beta$ 1 selectin,  $\alpha$ 4 $\beta$ 7 selectin, LFA-1 selectin, E-selectin, P-selectin, and L-selectin. Examples of oncogenes, although not an all inclusive list, are ras, src, myc, and bcl-2. Others, however, are also suitable for use with this invention.

In another preferred embodiment, the composition and formulations further comprise one or more surfactants. Suitable surfactants or surfactant components for enhancing the uptake of the anti-sense oligonucleotides of the invention include synthetic and natural as well as full and truncated forms of surfactant protein A, surfactant protein B, surfactant protein C, surfactant protein D and surfactant Protein E, di-saturated phosphatidylcholine (other than dipalmitoyl), dipalmitoylphosphatidylcholine, phosphatidylcholine, phosphatidylglycerol, phosphatidylinositol, phosphatidylethanolamine, phosphatidylserine; phosphatidic acid,

ubiquinones, lysophosphatidylethanolamine, lysophosphatidylcholine, palmitoyl-lysophosphatidylcholine, dehydroepiandrosterone, dolichols, sulfatidic acid, glycerol-3-phosphate, dihydroxyacetone phosphate, glycerol, glycerol-3-phosphocholine, dihydroxyacetone, palmitate, cytidine diphosphate (CDP) diacylglycerol, CDP choline, choline, choline phosphate; as well as natural and artificial lamellar bodies which are the natural carrier vehicles for the components of surfactant, omega-3 fatty acids, polyenic acid, polyenoic acid, lecithin, palmitic acid, non-ionic block copolymers of ethylene or propylene oxides, polyoxypropylene, monomeric and polymeric, polyoxyethylene, monomeric and polymeric, poly (vinyl amine) with dextran and/or alkanoyl side chains, Brij 35, Triton X-100 and synthetic surfactants ALEC, Exosurf, Survan and Atovaquone, among others. However, others may also be employed. These surfactants may be used either as single or part of a multiple component surfactant in a formulation, or as covalently bound additions to the 5' and/or 3' ends of the anti-sense oligonucleotides (oligos).

The agents administered in accordance with this invention are preferably designed to be anti-sense to target genes and/or mRNAs related in origin to the species to which it is to be administered. When treating humans, the agents are preferably designed to be anti-sense to a human gene or RNA. The agents of the invention encompass oligonucleotides which are anti-sense to naturally occurring DNA and/or RNA sequences, fragments thereof of up to a length of one (1) base less than the targeted sequence, preferably at least about 7 nucleotides long, oligos having only over about 0.02%, more preferably over about 0.1%, still more preferably over about 1%, and even more preferably over about 4% adenosine nucleotides, and up to about 30%, more preferably up to about 15%, still more preferably up to about 10% and even more preferably up to about 5%, adenosine nucleotide, or lacking adenosine altogether, and oligos in which one or more of the adenosine nucleotides have been replaced with so-called universal bases, which may pair up with thymidine nucleotides but fail to substantially trigger adenosine receptor activity. Examples of human sequences and fragments, which are not limiting, of anti-sense oligonucleotide of the invention are the following fragments as well as shorter segments of the fragments and of the full gene or mRNA coding sequences, exons and intron-exon junctions encompassing preferably 7, 10, 15, 18 to 21, 24, 27, 30, n-1 nucleotides for each sequence, where n is the sequence's total number of nucleotides. These fragments may be selected from any portion of the longer oligo, for example, from the middle, 5'-end, 3'-end or starting at any other site of the original sequence. Of particular importance are fragments of low adenosine nucleotide content, that is, those fragments containing less than or about 30%, preferably less than or about 15%, more preferably less than or about 10%, and even more preferably less than or about 5%, and most preferably those devoid of adenosine nucleotide, either by choice or by replacement with a universal base in accordance with this invention. The agent of the invention includes as a most preferred group sequences and their fragments where one or more adenines present in the sequence have been replaced by a universal base (B), as exemplified here. Similarly, also encompassed are all shorter fragments of the B-containing fragments designed by substitution of B(s) for adenosine(s) (A(s)) contained in the sequences, fragments thereof or segments thereof, as described above. A limited list of sequences and fragments is provided below.

Some of the examples of anti-sense oligonucleotide sequence fragments target the initiation codon of the respective gene, and in some cases adenosine is substituted with a universal base adenosine analogue denoted as "B", which lacks ability to bind to the adenosine A<sub>1</sub> and/or A<sub>3</sub> receptors. In fact, such replacement nucleotide acts as a "spacer". In fact, in all examples provided, whether it is an A or a B written in, either one of these may be substituted. In fact, what this means is that if an A is present A denotes adenosine or any universal base which may substitute for it, and if B is written in it also signifies adenosine or any universal base. Many of the examples shown below provide one such sequence and many fragments overlapping the initiation codon, preferably wherein the number of nucleotides n is about 7, about 10, about 12, about 15, about 18, about 21 and up to about 28, about 35, about 40, about 50, about 60. It may also be generally said that for the exemplary sequences B is adenosine or a universal base as well as an adenosine A<sub>2a</sub> receptor agonist, or adenosine A<sub>1</sub>, A<sub>2b</sub> or A<sub>3</sub> receptor antagonist.

#### **Human Receptor-related Antisense Polynucleotide**

5'-GGCGGCCTGG AAAGCTGAGA TGGAGGCGG CATGGCGGGC ACAGGCTGGG C TGCTTTTCT TTTCTGGGCC  
TCTGTGGTCT GTTTTTTCT GGCCTGCTG GGGCGCTCTC CGCCGCCCG CTGGCTCCCG GBGCCBTGB TGGGCBTGGC  
GTGGTCTTG CCTCCTTG GCTGCCGTG CCGCTCCCG GCCTCTGGC GGGTGGCCGT TGGGCCGTG TTCCCTGGG  
GCCTGGGGCT CCTTCTCTC GCCCTCTTG CTGGGCTCT GCTGCTGCTG GTGCTGTGGC CCCCCTACA CCGAGGAGCC  
CATGATGGG ATGCCACAGA CGACAGGCGT BCBCCBGBB GCCCBTGTG GGCBTGCCB BGCBCBGBG C GGC GCC GTG  
CCG CGT CTT GGT GGC GGC GG GTT CGC GCC CGC GCG GGG CCC CTC CGG TCC GTT CGC GCC CGC GCG GGG CCC

CTC CGG TCC CGG GTC GGG GCC CCC CGC GGC C GCC TCG GGG CTG GGG CGC TGG TGG CCG GG CCG CGC CTC CGC  
CTG CCG CTT CTG GCT GGG CCC CGG GCG CCC CCT CCC CTC TTG CTC GGG TCC CCG TG ACA GCG CGT CCT GTG TCT  
CCA GCA GCA TGG CCG GGC CAG CTG GGC CCC BCB GCG CGT CCT GTG TCT CCB GCB GCB TGG CCG GGC CBG CTG  
GGC CCC ACA GAG CAG TGC TGT TGT TGG GCA TCT TGC CTT CCC AGG G BCB GBG CB TGC TGT TGT TGG GCB TCT  
TGC CTT CCC BGG GCC CTT TTC TGG TGG GGT GGT GCT GTT GTT GGG CTT TCT TCT GTT CCC BCB GBG CBG TGC TGT  
TGT TGG GCB TCT TGC CTT CCC BGG GCC CTT TTC TGG TGG GGT GGT GCT GTT GTT GGG C TTT CTT CTG TTC CC TTT  
CCC CTG GGT CTT CC CTC CTG CTC TTT TTT C ATT TGC TCT CCT ATT ACT TTC TGT GTC CAT TTT TTC ATT AAC CGA  
GCT GT BTT TGC TCT CCT BTT BCT TTC TGT GTC CBT TTT TTC BTT BBC CGB GCT GT GCC TGT GTC TGT CCT CCT GCT  
TCG TTC CTC TCG TTC CTG CTT GGT GCC CTT GCC G GTC CTG CTC CTC CGG GCT GTG G GTC GTG GCC CTG GCT CCG  
GCT GGT GGG CTC CCC TGG CCT TCG CTG GCT GGC GGC GTG C GGG TCT TGC TCT GGG CCT GGC TGT GGC CGT  
GGT TGG GGG TCT TC GCT GCC TCC GTT TGG GTG GC TCT CTG AAT ATT GAC CTT CCT CCA TGG CCG TCC TGC TTG  
GAT TCT CCC GA TCT CTG BBT BTT GBC CTT CCT CCB TGG CCG TCC TGC TTG GBT TCT CCC GB GCC TTT CCT GGT  
TCT CTT GTT GTT TTT GGG GTT TGG CTT ACA GTA GAG TAG GGG ATT CCA TGG CAG GAG CCA TCT TCT TCA TGG  
ACT CC TTC AAG GAG ACC TTA GGT TTC TGA GGG ACT GCT AAC ACG CCA TCT GGA GC BCB GTB GBG TBG GGG BTT  
CCB TGG CBG GBG CCB TCT TCT TCB TGG BCT CC TTC BBG GBG BCC TTB GGT TTC TGB GGG BCT GCT BBC BCG CCB  
TCT GGB GC GTT GTT TTT GGG GTT TGG CTT GCC TTT CCT GGT TCT CTT BCB GTB GBG TBG GGG BTT CCB TGG CBG  
GBG CCB TCT TCT TCB TGG BCT CC TTC BBG GBG BCC TTB GGT TTC TGB GGG BCT GCT BBC BCG CCB TCT GGB GC  
GCC TGT GTC TGT CCT CCT GCT TCG TTC CTC TCG TTC CTG CTT GGT GCC CTT GCC G GTC CTG CTC CTC CGG GCT  
GTG G GTC CTC GCC CTG GCT CCG GCT GGT GGG CTC CCC TGG CCT TCG CTG GCT GGC GGC GTG C CCC BGB BCG BGB  
CCC GGB CCG BCB GGC CGT GGT TGG GGG TCT TC GCT GCC TCC GTT TGG GTG GC GAT CTC TGA ATA TTGA CCT TCC  
ATG GCG GTC CTG CTT GGA GBT CTC TGB BTB TTGB CCT TCC BTG GCG GTC CTG CTT GGB TCT GGG GTG TCC TGG  
CCT TCG TGG TTC CTC TTC CTT CGT TTG CCG TCC GCG GGG GCC CCC GGG CCT GGC TGC GCT CCT GCC CCG CCT CTT  
TCC CCG GCT CTT GCG CTG GGG GGT GCT CC CGT GTG TTT GCG CCC TC CTC CTG GTC GCG CTT GTC GTT TTG GGG  
CCG GCT TTG CCC GCC TCC CCG CGC CTG GCC CCG CC TTC CTG GGC TGC GTG CGC GTT CTG TTC TTC TTC CTG GCT  
CTG GGG TGT CCT GGC CTT CGT GGT TCC TCT TCC TTC GTT TGC CGT CCG CCG GGG CCC CCG GGC CT GGC TGC GCT  
CCT GCC CCG CCT CTT TCC CCG GCT CTT GCG CTG GGG GGT GCT CCC GTG TGT TTG CGC CCT CCT CCT GGT CGC GCT  
TGT CGT TTT GG GGC CCG CTT TGC CCG CCT CCC GGC GCC TGG CCC GGC CTT CCT GGG CTG CGT GCG CGT TCT GTT  
CTT CTT CCT GGC GCA GGA GAC AGG GCA GGG CGA TCA GGA GCA GCG TGA GCC AAA GGA GGA CCA TCG GGA ACG  
CAG CTC CCG AAC GCA GGA CAG AGG TGC C GC BGG BGB CBG GGC BGG GCG BTC BGG BGC BGC GTG BGC CBB BGG  
BGG BCC BTC GGG BBC GCB GCT CCG GBB CGC BGG BCB GBG GTG CC TCT GCC CTG TCC GCC GGC TCT TCG GTG GCT  
CGG CCC CGC TCC TTG TCT TGC CGC GGG TTG GTT CCT GGG CCT GGT TCT TGC GGG CGT TTC GGT CTG CTG GCT GGT  
CTG GGC CCG CCG TGC GGC GGG TGG CTT GCT GTT CTG CCT GGG CTC TCC CCT CTC CTC CTT TTC TCC CTT CCT CTG  
TCT TGC CTC CTT CCT CTG GGT CCT CTT GGC CTG GGC GCT CTT CCC CTC GGG CCG CTG CCG GCG CTC GTG CTG CCT  
GGT CCG CTC CCT GGG GGT GCT CCT TCC CTT TCC CCG CTC GTG GGG TTT GCG GGG CTG GGC TGC CCT GGG GGG  
TCT GGG CCT TTT GGG GTC GGC TGG CTG CTG CTT CCG GCC GCC TGG GCT TCC CTG TGC CCC TTT CCT CTG CTG GGT  
CCC CCT CCC GTT CCA AGC TGC ACC GCA CAG ACC GGC GCT ACA GGA CAG AGC CAG GCA AGC ACC CAT GGG GAT  
CCA GGC CCA GCT GTT CCB BGC TGC BCC GCB CBG BCC GGC GCT BCB GGB CBG BGC CBG GCB BGC BCC CBT GGG GBT  
CCB GGC CCB GCT G CTCAGTGGCC CCCAAAAGGA TGAGTAATAC ATGCGCCACG ATGATCATAT CCTTTTACT  
ATGAGGCCGT GTCTGTCGTG TCTTTCCTT GCTCTTGGTG TGTCTTTGCT GTGCCCTGCC TCTCTGCCCC TGCTGTCTGT  
GTCTTTCCTT TGCTCTTGGT GTGTCTTTGC TGTGCCCTGC CTCTCTGCC CGTGTCTGTC GTGTCTTTCC TTGTCTTTG  
GTGTGTCTTT GCTGTGCCCT GCCTCTCTGC GGGGGTGGCT TCCTGCCCGC TCTCTGGGCC GTCCCGTCCC TCGGCCCGGC  
GCCGCGCTCG GCTCCTCTCC CTCTGGCCCG GCTCGGGGCG GGGCGGGGCG GTGGGCGGGC GGCCTGCCCC TCGCGCGCGC  
GCTGGCCCT GCTGGCCGTC GGCTGCGCGC TGCTGGCTGC CCTGCTGGCC GCGCCGGGGC CTGTCCGCT CTGCGGGCGC  
TGCTCTCTGG CTTGTCTTCC GGCTCTTCTG CTGGGGTGGG GCTGGGCGGC CGGCCCGGTG CTGGGGCTCC TCGGGGGGGG  
GGGCTCTTCC GGGCTGTCTC CCTCCGGGGC GGGGGTTTCT GGCCGTGGGG GTCTTGCCCTG GCCTCCGGGC TCCTGCTTGT  
CTTGCCCTTCC TTCTCTGGTC GGTGTGGCT CGGGGCTCCG TGGGTCCCTG GCGCCCGTTT GTGTTTTGTC TTTTCCCTG  
GCGTCCCTGT GCCCTCTCC TCTCCTTCT CTGCTTCTCG CTCTCCTTTG TGGGGCCCTC CCTGCTGCTC TTGGTTTTGG  
GCTTTTTTTC TCTTCTCCT TTTCTGTGCG TGGGCCTCC GCACGCCTCT TGCCACCTCC TGCGCAGGGC AGCGCCTTGG  
GGCCAGCGCC GCTCCCGGCG CGGCCAGCAG GGCAGCCAGC AGCGCGCAGC CGACGGCCAG CATGCTTCT CCTCGGCTAC  
CACTCCATGG TCCCGCAGAG GCGGACAGGC GCBGCGCTC TTGCCBCTC CTGCGCBGGG CBGCGCCTTG GGGCCBGGC  
CGTCCCGGC GCGGCCBGB GGGCBGCCBG CBGCGCGCBG CCGBCGGCCB GCBTGCTTCC TCCTCGGCTB CCBCTCCBTG  
GTCCGCBGB GGGGBCBGG C GCTGCCCGGC GGGGTGTGCG CTGCGGCTC CCGTGCTCG TTCTGTCT CCCGGTCCCC  
CTTGCTGGC GTCTCGGGCC TTCGTCTCT TCCTCTTCTT CCTTCCGCTC CGTGGGGGCT GCTTGGTGGG GGCTGTGCT  
CGGGGTCCC GGGCTTCTGG CCCTTGCCGT TCATGGTGGC TAGTGGGGC GTTCBTGGTG GCTBGGTGGG GC GGG GTG  
GGT BGG CCG TGT CTG GGGGT GGC CBT GTT GGT TGC CTCT TGG TGG TGC GCC GGG CCG TCT TGG CTT TCT TCT  
CCT TCG GGC CCT CCG GCC GGT GCT TGT GGGCT CCT CCC GGG CCG CCT CCC CCG GCG GGG GCT TCT TGGCG CTG  
GCG GGG GGG CCT CCGCT CTG TGG CTG GGC GTT CCT TGG TGT TCT GGG TGGTGG CCG GCG TGG TGG CCT CTG  
TGGGGG CCC GCG GCT GCB GGG GTTG CCT GTC TGC TTC GTCTT TGC GCT CCC GGG CCG CCGGG GTG GGT AGG CCG  
TGT CTG GGGGT GGC CAT GTT GGT TGC CCGG CCC GCG GCT GCA GGG G ACAGGGGCTG TAATCTTCATC

TGCAGGTGGC ATGCCAGTGA AATTTAGATC ATCAAAATCC ACATCTGTG GATCTGTAAT ATTTGACATG TCCTCTTCAG  
TTTCAGCAAT GGTTCATCT AACTGAAGCA CCGGCCAGGB CBGGGGCTGT BBTCTTCBTC TGCBBGTGGC BTGCCBTGB  
BBTTTBGBTC BTCBBBTCC CBCBTCTGTG GBTCTGTBBT BTTTGBCBTG TCCTCTTCBG TTTCBGCBB: TGTTTGBTC  
TBBCTGBBG BCCGGCCBG TGGCTCGGTG CTCTGCCCC TGTGTGCGG GCGCTCGGT GGTGTGGCCC CTGTGGTGCT  
TCGTTTCCCC CTCTTTCTCT TTGTTCGGGG GTTCTGTGG CGGGCTGCTT GTCTCGTTCC GCCCTGTCCG GCGGGAAGCC  
TCTCTCTCT CCCCAGATC CGCGACAGGC CGCAGGCAAG AACCAGCGCA ACCAGGGCGC GTCCGCACAG ACTTGGAGGC  
GGCTGCATGC TGCTACCTGC TCCAGAAGCG TCCGGTGGCC CCGCGGCC CTGTGCGGCG GGBBGCCTCT CTCCTTCCC  
CBGBTCCGCG BCBGGCCGCB GGCBBGBBCC BCGCBBCB GGGCGCGTCC GCBGBBCTT GGBGGCGGCT GCBTGTGCT  
BCCTGTCTGGGCG GGBBGCCTCCG GTGGCCGCG CGCGTCCGT GGC CGCGCGC CTCTCTCT CTCCCGTGG  
CCCTGTCCGG CGGGTCTGC CGTCTGTCT CTTTTCTT TGCTGTCTTG TCTCCCGTC TGTCTT GTCTGTCTC  
CCCGTCTCT CCCACTGCTT CTCCCGGGG CTCCCGGC TTCGGGTGGC CGGTGTCCG GGTCCGGCG CGGCGCGGC  
TTCGGCTGCG GGTGGGTGGC GCGGGCTGCC GGTCCGCGC GCGCCTGGG CCTGTGTCT GCTTTTGT TGTTCGTTT  
TGGCTGTCC GGTCTGTGT GTGGTTGTT TGTCTCTT TGGGTGTGG CCTGCGGT TTGGCTGTGG GCCCTTGGG  
GCCTTGGCT CTGGCTCGT TGTCTCCCC GTCTCTCC ACTGCTCT CCGGGGGCT TCCCGGCTT CGGGTGGCG  
GTGTCCCGG CTCCGGCGCG GCGGCGGCTT CGCTGCGG TGGGTGGCG GGGCTGCCG GTCCGCGCG CGCCTGGCC  
CTTGTGCTG TTTTGTGTG TTCCGTCTG GTGTCTCGG TCTGTGTTG GTTGTGTTG TTCTCTCTG GGTGTGGCC  
TTGCGGTTT GGTGTGGGC CTTTGGGGC CTGGCTCT GGCTCCAT CCACATGATT GCTTAGATT GTGCTGTATC  
TCTCAGGATT ATCACTGATT ACACATCCAA CCAGTGCCAG CAAAAGGAT GCCCTGAGGC AAAGGGTTT CATCTGAGG  
CAAAATTGAG GACBTCCBC BTGTTGCTT BGTGTTGTC TGTCTCTC BGGTTTCTB CTGTTTBCB BTCCBCCBG  
TGCCBCCBB BBGGTGGCC TGBGGCBGG GGTTCBCTT TGBGGCBGG TTGBGGGGGCTBBGBT GBTCCBCTC  
BCTCCBCTG TGCCBCCBC BGBGGTCBCC BCBTGTCCG TGTBGGCBGC TGCCBGGG BCBTTTGCC BGGCTGGTG  
CBGGBBCTG TTGGGTCCG BGGTGTBGT GGBGTGTTT GGGGBGGGT CTBGTCCBC CGGBGGBCG TBTCTBT  
CGBGGCTBG CGGTBBGGC CTBCTBTCTG TBCBCCBCC CCTCTGCBG CBGCTCTG TCGTGGCGC TGGGGCTCBG  
GGTCCGGC TAAGATGATC CACATCACTA CCAGTTGCC CACCACAGAG GTCACCACAA TGACCGTGA GGCAGCTGCC  
CAAAGGACAA TTTGCCAGGC TGGTTGCACG AACTGATTG GTTCCGAGGT GTTAGTGGAG ATGTTTGGG AGAGGTCTGA  
GTCCACCGG AGGACGTTAT CCATTCGAA GCTAGGCGGT AAAGCCCTAC TATCTGTACA CAACCCCT CTGCAGCAGA  
GTCCTGCTG GCGCCTGGG GTCAGGGTC CGTCTGTG TGGCGCTGG GGTCTTCTT TTGTGGGCTC TTTGTGGCT  
GTGGCTGTG TCTGTGTTG TGCTGCCCTG GGTGTGGGG TGTGGCCTG GGGCGTCT CTGGCTCTC CTCGTGGCC  
CCC GGTGBCBTTG BCBTGTCCG CGCGGTCCC TBBBGTGG GCCCGCAGC CCAGCCACT CACTTGGGG  
CGGGTGGCA GCACGAACAG CACCAGAGG AAGGGGGCG GCCAGAAAG GCAGCCCGCA GGCCAGGATC AGGTCTGCTG  
CGGCCGAGA TAATGGCATT CACCACGCG CGGCCAGCG CACGCCGCG ATCCGGCCG GGTCTGACC TGCAGCCCC  
GTCTCTTG CATTCTGGG CCCCAGTCA TCTCTCCCT GCCCCCTT CTGGGGCAGG GACGGGGT BCBTGBGCB  
TGTCGGCGG GTCCGTTB GBGTGGGCC GCCAGCCAG CCACTCCACT TGGGGCGGG TGGCCAGCAC GAACAGCACC  
CAGAGGAAG GGGCGGCC AGAAGGGCAG CCGCAGGCC AGGATCAGGT CTGTGCGG CGGAGATAAT GGCATTACCC  
ACGCGCGGC CCAGCGCAC CCGCGCATC GCGCGGTT CTGACCTGA GCGCCGCT CTGTGGCATT CTTGGGCCCC  
AGTCACTCT CTCCCTGCC CCTTGTGG GGCAGGGAC GCGGTGTTG CBGTGGTGT GCGCGTTGB GGTBTGGCG  
TCCBCCBT CTCTTTCT CTGTTTTC GTTCTCTG CGTCTGTG TT ATCGCCCT CCATCTCAGC TTTCCAGGCC  
GCCTACATCG GCATCGAGGT GTCATCGCC CTGGTCTG TGCCCGGAA CGTGTGGT ATCTGGCGG TGAAGGTGA  
CCAGGCGCT CGGGATGCCA CTTCTGCTT CATGCTCTG CTGGCGGTG CTGATGTGG CGTGGGTGCC CTGGTCATC  
CCCTCGCAT CTTATCAAC ATTGGGCCAC AGACCTACT CCACACTGC CTCATGGTT CTGTCCGGT CCTCATCTC  
ACCCAGAGCT CCATCTGGC CTGTGTGCA ATTGTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT  
GGTGGTGACC CCGGAGGG CGGCGGTGG CATAGCCGG TGCTGGATC TCTCTCTG GGTGGGACTG CCCATATG  
TTGGCTGAA CAATCTGAGT GCGGTGGAG GGGCTGGG AGCCAACGG AGCATGGGG AGCCCGTAT CAAGTGCGAG  
TTCGAGAAG TCATCAGCAT GGAGTACAT GTCTACTCA ACTCTTTG GTGGGTGCTG CCCCCGCTT TCCTCATGGT  
CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA AGGTGTGGC CTCCTCCGG GACCCGAGA  
AGTACTATG GAAGGAGCTG AAGATCGCCA AGTCTGTGG CCTCATCTC TCTCTTTG CCTCAGCTG GCTGCCTTG  
CACATCTCA ACTGCATCAC CTTCTCTG CCGTCTGCC ACAAGCCAG CATCTTACC TACATTGCA TCTCTCAC  
GCACGCAAC TCGCCATGA ACCCATTTG CTATGCTTC CGCATCCAGA AGTCCGCGT CACCTCTT AAGATTGGA  
ATGACCATTT CCGTGGCAG CTGCACCTC CCATTGACG GGATCTCCA GAAGAGAGG CTGATGACTA G ATGAGTGTCA  
GAAGTGTGA GGTGCTGT TCTGAATCCC AGAGCTCT CTCCCTCTG GAGGCTGGCA GGTGAGGAAG GGTAACT  
CACTGGAAG AATCCCTGA GTAGCGGT GCTGAAGCG TCGAGGTGT GGGCACTT GACAGAACAG TCAGGCAGCC  
GGGAGCTCT CCAGCTTTG TGACCTTGG CCGGCTGG AGCGTGGC GGGAGCCG AGGACTATGA GCTGCCGCG  
GTTGTCCAGA GCCAGCCCA GCCTACGCG CGCGGCCG AGCTCTGTT CCTGGAACCT TGGGCACTG CTCTGGGACC  
CCTGCCGCC AGCAGGAGG ATGGTGCTT CCTGTGCC CTGGTGCC GTCTGTGAT GTGCCAGCC TGTGCCGCC  
ATGCCGCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GTCATCGCC CTGGTCTG TGCCCGGAA  
CGTGTGGT ATCTGGCGG TGAAGGTGA CCAGGCGTG CGGGATGCCA CTTCTGCTT CATGCTGTG CTGGCGGTG  
CTGATGTGG CGTGGGTGCC CTGGTCATC CCTCGCAT CCTCATCAAC ATTGGGCCAC AGACCTACT CCACACTGC  
CTCATGGTT CTGTCCGGT CCTCATCTC ACCAGAGCT CCATCTGGC CTGTGTGCA ATTGTGTGG ACCGCTACT

CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCAGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC  
TCTCCTTCGT GGTGGGACTG ACCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC  
AGCATGGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT  
GTGGGTGCTG CCCCCTCTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA  
AGGTGTGGC CTCTCCGGC GACCCGAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCTC  
TTCTCTTTG CCCTCAGCTG GCTGCCCTTG CACATCTCA ACTGCATCAC CCTCTTCTG CCGTCTGCC ACAAGCCCAG  
CATCTTACC TACATTGCCA TCTTCTCAC GCACGGCAAC TCGGCCATGA ACCCATTTGT CTATGCCTTC CGCATCCAGA  
AGTTCCGCGT CACCTTCTT AAGATTGGA ATGACCATT CCGCTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCCA  
GAAGAGAGGC CTGATGACTA GACCCCGCT TCCGCTCCA CCAGCCCACA TCCAGTGGGG TCTCAGTCCA GTCTCACAT  
GCCCCTGTG CCAGGGGTCT CCCTGAGCCT GCCCAGCTG GGCTGTTGGC TGGGGGCATG GGGGAGGCTC TGAAGAGATA  
CCCACAGAGT GTGGTCCCTC CACTAGGAGT TAACTACCCT ACACCTCTGG GCCCTGCAGG AGGCCTGGGA GGGCAAGGGT  
CCTACGGAGG GACCAGGTGT CTAGAGGCAA CAGTGTCTG AGCCCCACC TGCCTGACCA TCCCATGAGC AGTCCAGCGC  
TTCAGGGCTG GGCAGGTCT GGGGAGGCTG AGACTGCAGA GGAGCCACCT GGGCTGGGAG AAGGTGCTTG GGCTTCTGCG  
GTGAGGCAGG GGAGTCTGCT TGTCTTAGAT GTTGGTGGTG CAGCCCCAGG ACCAAGCTTA AGGAGAGGAG AGCATCTGCT  
CTGAGACGGA TGGAAGGAGA GAGGTGAGG ATGCACTGGC CTGTTCTGTA GGAGAGACTG GCCAGAGGCA GCTAAGGGGC  
AGGAATCAAG GAGCCTCCGT TCCACCTCT GAGGACTCTG GACCCAGGC CATACCAGGT GCTAGGGTGC CTGCTCTCCT  
TGCCCTGGC CAGCCCAGGA TTGTACGTGG GAGAGGCAGA AAGGGTAGGT TCAGTAATCA TTTCTGATGA TTTGCTGGAG  
TGCTGGCTCC ACGCCCTGGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCCT CAAACAGCCA CGAGGTGGTA GCTCTGAGCC  
CTCCTTCTG CCCTGAGCTT TCCGGGAGG AGCCTGGAGT GTAATTACCT GTCATCTGGG CCACAGCTC CACTGGCCCC  
CGTTGCCGGG CTGGAGTGT CTTAGGTGAC CCCATCTCTG CTGCTTCTGG CCCTGATGGA GAGGAGAACA CTAGACATGC  
CAACTCGGA GCATTCTGCC TGCTGGGAA CGGGGTGGAC GAGGGAGTGT CTGTAAGGAC TCAGTGTGTA CTGTAGGCGC  
CCCTGGGGTG GGTTAGCAG GCTGCAGCAG GCAGAGGAGG AGTACCCCC TGAGAGCATG TGGGGGAAGG CCTTGCTGTC  
ATGTGAATCC CTCAATACCC CTAGTATCTG GCTGGGTTT CAGGGGCTTT GGAAGCTCTG TTGAGGTGT TCGGGGTCT  
AGGACTTTAG GGATCTGGGA TCTGGGGAAG GACCAACCA TGCCCTGCCA AGCCTGGAGC CCCTGTGTTG GGGGGCAAGG  
TGGGGAGCC TGGAGCCCT GTGTGGGAGG GCGAGGCGGG GGAGCCTGGA GCCCCTGTGT GGGAGGGCGA GGGGGGGAT  
CCTGGAGCCC CTGTGTCGGG GGGCGAGGGA GGGGAGGTGG CCGTGGTTG ACCTTCTGAA CATGAGTGT AACTCCAGGA  
CTTGCTTCCA AGCCCTTCCC TCTGTGGAA ATTGGGTGT CCCTGACTCC CAAGGGAGGC CCATGTGACT AATAAAAAAC  
TGTGAACCCT CGCATTGTG TTTAATAAA AGAATCTGGA AGATAAATG TCTGAAGAG AGACAAAGGA AGGAAAATTT  
AAATCCTTAG ATTCAAGCAG AAGAATTCCA TGTGGAAGGT TTGGGTGTT GTTGTGTTG TTTGGTGTG TTTTGTGTTT  
TTTGTGTTTT TGTGTTTTT TGAGATGGAG TCTGCTGTG TTACCGGAG CGACAGAGCC GCACGGCCGA GTCGAGTCCC  
AGCCAGTAC CATCCCTCTG GAGCTTACCG GCGGCCCTG GCTTCCCCAG GAATCCCTGG AGCTAGCGGC TGCTGAAGGC  
GTGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCTAG CCGGAGCTCT GCCAGCTTTG GTGACCTGG GTGCTTGCCT  
CGTGCCCTT GGTGCCCGT TGCTGATGT CCCAGCTGT GCGGCCATG CCGCCCTCCA TCTCAGCTTT CCAGGCCCGC  
TACATCGGA TCGAGGTGCT CATGCCCTG GTCTCTGTG CCGGGAACGT GCTGGTGATC TGGGCGGTGA AGGTGAACCA  
GGCGCTGCGG GATGCCACCT TCTGCTTAT CTGTGCTG GCGGTGGCTG ATGTGGCCGT GGGTGCCCTG GTCATCCCCC  
TGCCATCCT CATCAACATT GGGCCACAGA CCTACTTCCA CACCTGCCTC ATGGTTGCCT GTCCGGTCT CATCTCACC  
CAGAGCTCCA TCCTGGCCCT GCTGGCAATT GCTGTGGACC GCTACCTCCG GGTCAAGATC CCTCTCCGT ACAAGATGGT  
GGTGACCCCC CGGAGGGCGG CGGTGGCCAT AGCCGGCTGC TGGATCCTCT CCTCTGTGT GGGACTGACC CCTATGTTG  
GCTGGAACAA TCTGAGTGG GTGGAGCGG CCTGGGAGC CAACGGAGC ATGGGGGAGC CCGTGATCAA GTGCGAGTTC  
GAGAAGGTCA TCAGCATGGA GTACATGGT TACTTCAACT TCTTGTGTG GGTGCTGCC CCGCTTCTCC TCATGGTCTC  
CATCTACCTG GAGGTCTTCT ACCTAATCCG CAAGCAGCTC AACAAGAAGG TGTGGCCTC CTCGGGCGAC CCGCAGAAGT  
ACTATGGGAA GGAGCTGAAG ATCGCCAAGT CGCTGGCCCT CATCTCTC CTCTTGGCC TCAGTGGGT GCCTTTGCAC  
ATCTCAACT GCATACCCT CTCTGCCCG TCTGCCACA AGCCCAGCAT CTTACCTAC ATTGCCATCT TCCTACGCA  
CGCAACTCG GCCATGAACC CCATTGTCTA TGCTTCCG ATCCAGAAGT TCCGCGTCAC CTCTTAAG ATTTGGAATG  
ACCATTTCCG CTGCCAGCCT GCACCTCCA TTGACGAGGA TCTCCAGAA GAGAGGCCTG ATGACTAGAC CCCGCTTCC  
GCTCCACCG CCCACATCCA GTGGGTCTC AGTCCAGTCC TCACATGCCC GCTGTCCAG GGGTCTCCCT GAGCCTGCC  
CAGCTGGGT GTTGGCTGGG GGCATGGGG AGGCTCTGAA GAGATAACCA CAGAGTGTG TCCCTCCACT AGGAGTTAAC  
TACCCTACAC CTCTGGGCC TGCAGGAGG CTGGGAGGG AAGGGTCTA CGGAGGGACC AGGTGTCTAG AGGCAACAGT  
GTTCTGAGCC CCCACTGCC TGACCATCCC ATGAGCAGT CAGAGCTTCA GGGCTGGGCA GGTCTGGG AGGCTGAGAC  
TGCAGAGGAG CCACCTGGC TGGGAGAAGG TGCTGGGTCT TCTGCGGTGA GGCAGGGGAG TGTGCTGTG TTAGATGTTG  
GTGGTGAGC CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA AGGAGAGAGG TTGAGGATGC  
ACTGGCCTGT TCTGTAGGAG AGACTGGCA GA CCCAGCCCC AGGCTCAGAA GCGGAGGCG GAGGCGCGGT  
CCGGCGCTA TGGCATGCC CGCGGGTCT CACGCGGCTG CCCCTCGCCC GCGCGCCTT CGGTAGGGGG CGCCGGGGC  
CCAGCTGGC CGGCATGCT GCTGGAGACA CAGGACGCG TGTACGTGGC GCTGGAGCTG GTCATCGCCG CGCTTTCGT  
GGCGGCAAC GTGCTGGTGT GCGCCGCGGT GGGCAGCGG AACACTCTG AGACGCCAC CAACTACTTC CTGGTGTCC  
TGGCTGCGG CGACGTGGC GTGGGCTCT TCGCCATCCC CTGTGCCATC ACCATCAGCC TGGGCTCTG CACTGACTTC  
TACGGCTGCC TCTTCTCGC CTGCTCTGT CTGGTGTCA CGCAGAGCTC CATCTCAGC CTCTGGCCG TGGCAGTCGA  
CAGATACCTG GCCATCTGTG TCCCGCTCAG GTATAAAGT TTGGTCACGG GGACCCGAGC AAGAGGGGTC ATTGCTGTCC  
TCTGGTCTT TGCCTTTGGC ATCGGATTGA CTCCATTCCT GGGGTGGAAC AGTAAAGACA GTGCCACCA CAACTGCACA



GAACCTGGG ATGGAACCAC GAATGAAAGC TGCTGCCTTG TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT  
GGTATATTTC AATTCTTTG GGTGTGTTCT GGGGCACTG CTTATAATGC TGGTGATCTA CATTAGATC TTCCTGGTGG  
CCTGCAGGCA GCTTCAGCGC ACTGAGCTGA TGGACCACTC GAGGACCACC CTCCAGCGGG AGATCCATGG AGCCAAGTCA  
CTGGCCATGA TTGTGGGGAT TTTTGCCCTG TGCTGGTTAC CTGTGCATGC TGTTAACTGT GTCACCTCTT TCCAGCCAGC  
TCAGGGTAAA AATAAGCCCA AGTGGGCAAT GAATATGGCC ATTCTTCTGT CACATGCCAA TTCAGTTGTC AATCCCATTTG  
TCTATGCTTA CCGGAACCGA GACTTCCGCT ACACITTTCA CAAAATTATC TCCAGGTATC TTCTCTGCCA AGCAGATGTC  
AAGAGTGGGA ATGGTCAGGC TGGGGTACAG CCGTCTCTCG GTGTGGGCTT ATGATCTAGG CTCTCGCCTC TTCCAGGAGA  
AGATACAAAT CCACAAGAAA CAAAGAGGAC ACGGCTGGTT TTCATTGTGA AAGATAGCTA CACCTCACAA GGAAATGGAC  
TGCTCTCTT GAGCACTTCC CTGGAGCTAC CACGTATCTA GCTAATATGT ATGTGTCAAT AGTAGCACCA AGGATTGACA  
AATATATTTA TGATCTATTC AGCTGCTTTT ACTGTGTGGA TTATGCCAAC AGCTTGAATG GATTCTAACA GACTCTTTTG  
TTTTTAAAG TCTGCTTGT TTATGGTGA AAATTACTGA AACTATTTTA CTGTGAAACA GTGTGAACTA TTATAATGCA  
AATACTTTTT AACTTAGAGG CAATGGAAAA ATAAAGTTG ACTGTACTAA AAATGTATAC TTGTTGCCAG GAAGGTGACC  
TCAAAAAATTA AAAGTATAAT TATTCGGCCG GGCATGGTGG CTCACACCTG TAATTCAGC ACTTTGGGAG GCCAAGGCAG  
GCGGATCAG AGGTCAGGAG TTCAAAACCA GCCTGTCCAA TATAGTG GGGCAATTTG TTAGTTATCC GCCGCCACCA  
AGACGCGGCA CGGCGCCTGG ACCGGAGGGG CCGCGCGCG GCGCGAACTT TGGGCTCGGG CGAGTGGGTG GTGCTCCGCC  
CAGCCCGAGA CGGGCGGGCG CGCGGGCCAA TGGGTGCCG CTCTTGGCCG CGGGGGGCC CGACCCGTGG GTCCCGGCCA  
CCAGCGCCCC AGCCCGAGG CTCAGAAGCG GCAGGCGGAG CCGCGGTCCG GCGCTATGG CCATGCCCGG CGGCTCTAC  
GCGGCTGCC CTGCGCCGCG GCGCCTCGG TAGGGGGCG CCGGGGCCA GCTGGCCCG CCATGCCCGG CGGCTCTAC  
GACGCGCTGT ACCTGGCGCT GGAGCTGGTC ATCGCCGCG TTTGGTGGC GGGCAACGTG CTGGTGTGCG CCGCGGTGG  
CACGGCGAAC ACTCTGCAGA CGCCACCAA CTACTCTCTG GTGTCCCTGG CTGCGGCCGA CGTGGCCGTG GGGCTCTCG  
CCATCCCTT TGCCATCACC ATCAGCCTGG GCTTCTGCAC TGACTTCTAC GGCTGCTCT TCCTCGCTG CTTGCTGTG  
GTGCTCACGC AGAGCTCCAT CTTAGCCTT CTGCGCGTGG CAGTCGACAG ATACCTGGCC ATCTGTGTCC CGCTCAGGTA  
TAAAAGTTTG GTCACGGGGA CCCGAGCAAG AGGGGTCAAT GCTGTCTCT GGGTCTTGC CTTTGGCATC GGATTGACTC  
CATTCTGGG GTGGAACAGT AAAGACAGTG CCACCAACAA CTGCACAGAA CCCTGGGATG GAACCAAGAA TGAAAGCTGC  
TGCTTGTGA AGTGTCTCT TGAGAATGTG GTCCCATGA GCTACATGGT ATATTTCAAT TTCTTTGGGT GTGTTCTGCC  
CCCACTGCTT ATAATGCTGG TGATCTACAT TAAGATCTT CTGGTGGCT GCAGGCAGCT TCAGCGCACT GAGCTGATGG  
ACCACTCGAG GACCACCCTC CAGCGGGAGA TCCATGCAGC CAAGTCACTG GCCATGATTG TGGGGATTTT TGCCCTGTG  
TGGTTACCTG TGCATGCTGT TAACTGTGTC ACTCTTTTCC AGCCAGCTCA GGGTAAAAAT AAGCCCAAGT GGGCAATGAA  
TATGGCCATT CTTCTGTAC ATGCCAATTC AGTTGTCAAT CCCATTGTCT ATGCTTACCG GAACCGAGAC TTCCGCTACA  
CTTTTACAA AATTATCTCC AGGTATCTT TCTGCCAAGC AGATGTCAAG AGTGGGAATG GTCAGGCTGG GTTACAGCT  
GCTCTCGGTG TGGGCTATG ATCTAGGCTC TCGCCTCTT CAGGAGAAGA TACAAATCCA CAAGAAAACA AGAGGACAG  
GCTGGTTTTT ATTGTGAAAG ATAGCTACAC CTCACAAGGA AATGGACTGC CTCTCTTGG CACTTCCCTG GAGCTACCAC  
GTATCTAGCT AATATGTATG TGTCAGTAGT AGGCTCCAAG GATTGACAAA TATATTTATG ATCTATTCAG CTGCTTTTAC  
TGTGTGGATT ATGCCAACAG CTTGAATGGA TTCTAACAGA CTCTTTTGT TTTAAAGTC TGCCTTGTG ATGGTGGAAA  
ATTACTGAAA CTATTTTACT GTGAAACAGT GTGAACTATT ATAATGCAAA TACTTTTAA CTTAGAGGCA ATGGAATAAT  
AAAAGTTGAC TGTAATAAAA ATG GAATTCACAG ATGGGCAGAG GTGGCTGGG TGGTGACCCT AAGTGTGTCT  
CCTGCCTTTA TTCTCTCTAG TGGGTATTTC TTTATGTGG TATCTTGCCT ACAGCATGCT GTGTTTGGAC ACAAACCCCT  
TTCCTTGGT TCTCTGACCC AGCTGAGATG GACTGATTCC AAAAGAACTC ACCTATGTAC TGGGGTAGGG GAGGGAGGGT  
TTTTTGCACT ATTTAACTAA GGTTCAAAGA GTGCTATATA GTGAGAAAGG CTTCTTTTTT TTTTTTTTTT TTTTTTGGCA  
GAGTGCTGCC TCCTAGAAAT TTCTCTTGGT AACTTCTTCT TCTGAAGCAC AGATAAAGAA AACAATTACA GTAGAAACAT  
TTATGAGGGA CACATTGGAG GCCGATGAAG CTTTCAAGT TCCAGCAGTG CAGGGATGTG GGCAGAACTG ACATTGGAAA  
ATACTAGAAT GATGGAAATT CAGTTGGAGA GGAAGTCCCT TTTAATGTG TGGGGAGTCT GCTCAGGGAG AAATGACAAG  
TCTGGCGGGG ACAAGTATGG GATTGGTAA GACTTGGATC AACTTGGGAT ACAGGGTGGG GGTGCGGAGT GGAATCAATG  
AATGATGCCA GAGCAGATCA ACTAACAAGA GGACCCTGAT GAGCCCCAGG CAGAGGCGTC TCCCTTATGC CCCACTCTGA  
AGTGTGTTGT AGTAAACACC AGAACGCCAT TGTTGTTACT GCTGAATTTT ATTTTGGGCT GTACATATTT AGATGCTTAA  
GGTAAAAATG ATAAAGCCCT CAAGCCACTG TGTGGGTTTG GGTCCAAGTG TTCTTCTTG CTGCTCTCT AACACGCTG  
GTTAAATAA TCCCTTTGGA TGGTGTGAG AAGCACCTGA ACCAAGTGGG TCCCCAAATA ACAATGGCGT GCAAGTGTCT  
GGTCCCAGA AGTTGGTGAC TAGGTAAGCA GCTTCAGGGA GAGGGGGCTG ATTCCAGAC AGTCGCTGT TCCTGCGGGG  
ATGGGGCTGA GGCTTGGGA ATGTGGGCAG GAGGATATGC CATTGATTG TGTGACACAC GTTCTTTTCC CTCTTTCTG  
TATGTCTGGT CATTCTGCTA TTCTGTCTT CCTCACATAG GTTGGACATT GGCCGGCTGC CAGCATAAGT GCCAGTGTGA  
TTTTGCTAGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTGGCCT  
TCTGAGCAGG GAATCTTTC TTATCCCTT GACCAAGGAT CTTTGTGCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG  
CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT AAGGTTAGGA GGCTGCCACC AAAGTCTCTT TTTTGTCTC  
CTGCTTCTCC CGTTTGCCTC CTTATCATGA GATCTTTTGT CTAAGCTGGC AGAAAGATTG CATAGTCAGT GCTTCCAGCT  
CTGCTCCAC CTGATCCTGC ACTGTCTCT GGTCCCTGAA TGAATGAACT CTGATACCCA ATCTTGTCTC GAGCCTTCTC  
TATGCCACTC ATGGCTCCTC TTCTGTCTT TCCATCTTTT TGCTGAGAGT TCTGAGCTCT GTACTTCTC TTGGCCCATC  
TCACTTCTG AAACACCCCT GAAGAGGGT GCTTATCTTG ATGGAACCTA AAAAGCCAAA AAGCTGCAGG CAGAGGCGTT  
GAGGACATCT GTTTGGGGA CTAAGAGCAG CAGCACTTTC AGATTCACTC CATATAGAGC TGTCTACAG CATTCTGGAA  
ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT GGAAGTGACC CACCTGTGAT GAGCCCTTTC TAAGGAGAAG GGTTCCTAAG



AGATCACCCC ACCAGAAAAG GGTAGGAATG AGCAAGTTGG GAATTTTAGA CTGTCACTGC ACATGGACCT CTGGGAAGAC  
GTCTGGCGAG AGCTAGGCCC ACTGGCCCTA CAGACGGATC TTGCTGGCTC ACCTGTCCCT GTGGAGGTTT CCTGGGAAG  
GCAAGATGCC CAACAACAGC ACTGCTCTGT CATTGGCCAA TGTTACCTAC ATCACCATGG AAATTTTCAT TGGACTCTGC  
GCCATAGTGG GCAACGTGCT GGTCACTGTC GTGGTCAAGC TGAACCCAG CCTGCAGACC ACCACCTTCT ATTTCACTGT  
CTCTTAGCC CTGGCTGACA TTGCTGTTGG GGTGCTGGTC ATGCCCTTGG CCATTGTTGT CAGCCTGGGC ATCACAATCC  
ACTTCTACAG CTGCCCTTTT ATGACTTGCC TACTGCTTAT CTTTACCAC GCCTCCATCA TGTCTTGTCT GGCCATCGCT  
GTGGACCGAT ACTTGCGGGT CAAGCTTACC GTCAGGTAGC CTGCGGCGTG GGGTGGGCAG CAATTGAGGC AGCTGGGAAA  
TGAGGCTACA AAGCCAGAGC CTGCTGAATT TTATTTTGA CTGTACATAT TTAGATGCTT AAGGTAAGAA TGATAAAGC  
CTCAAGCCAC TGTGTGGGT GGGTCCAAGT GTTCTTGTCT GCTGCCTCTC TAACACGCCT GGTAAATA ATCCCTTTGG  
ATGGTGCTGA GAAGCACCTG AACCAAGTGG GTCCCAAAAT AACTATGGCG TGCAAGTGTG TGGTCCCAG AAGTTGGTGA  
CTAGGTAAGC GACTCAGGA GAGGGGCTGA TTCCAGACA GTCGCTGTT CCTGTGGGA TGGGGCTGAG GCTTGGGAA  
TGTGGGCAAG AGGATATGCC ATTTGATTCT GTTGACACG TTCTTTTCCC TTCTTCTGT ATGTCTGGTC ATTCTGCTAT  
TCTGTCTTC CTCACATAGG TTGGACATTG GCCGGCTGCC AGCATAAGTG CCAGTGTGAT TTTGCTAGGG TGTAGCTGA  
GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTGGCCT TCTGAGCAGG GAATCTTTGC  
TTATCCCTT GACCAAGGAT CTTTGTCTCA AAGGCTGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT  
TAGCAGGAAT AGTTCTGGCT AAGGTTAGGA GGCTGCCACC AAAGTCTCTT TTTTGTCTT CTGCTTCTCC CGTTTGCCTC  
CTTATCATGA GATCTTTTGA CTAAGCTGGC AGAAAGATTG CATAATCAGT GCTTCCAGCT CCGTCCCAC CTGATCTCTC  
ACTGTCTCT GGTCCCTGAA TGAATGAACT CTGATACCCA ATCTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC  
TTCTGCTCT TCCATCTTTT TGCTGAGAGT TACTGAGCTC TGTACTTCT CTGGCCCAT CTCATTCTT GAAACACCCC  
TGAAGAGGGT TGCTTATCTT GATGGAATC AAAAGCCAA AAAGCTGCAG GCAGAGGCGT TGAGGACATC TTTTGGGGA  
ACTAAGAGCA GCAGCACTT CAGATTCAGT CCATATAGAG CTGTCTACA GATTCTGGA AACTTGAGGA TGTGCGGTGC  
ATAAAGGGG TGGAAGTGAC CCACCTGTGA TGAGCCCTT CTAAGGAGAA GGGTTTCCA GAGATCACCC CACCAGAAAA  
GGGTAGGAAT GAGCAAGTTG GGAATTTTAG ACTGTCACTG CACATGGACC TCTGGGAAGA CTTGTGGCGA GAGTAGGCC  
CACTGGCCCT ACAGACGGAT CTGCTGGCT CACTGTCC TGTGGAGGT CCCCTGGGA GGAAGATGC CCAACAACAG  
CACTGCTCTG CGAATTCGGG GGACATCTGT TTGGGAACT AAGAGCAGCA GCACTTTCAG ATTCACTCCA TATAGAGCTG  
TCCTACAGCA TTCTGGAAC TTGAGGATGT GCGGTGCATA AACGGGCTG AAGTGACCCA CCTGTGATGA GCCCTTCTA  
AGGAGAAGGG TTCCAAGAG ATACCCAC CAGAAAAGGG TAGGAATGAG CAAGTTGGGA ATTTAGACT GTCAGTGCAC  
ATGGACCTT GGAAGACGT CTGGCGAGAG CTAGGCCAC TGGCCCTACA GACGATCTT GCTGGCTCAC CTGTCCCTGT  
GGAGGTTCCC CTGGGAAGGC AAGATGCCA ACAACAGCAC TGCTCTGCA TTGGCCAATG TTACCTACAT CACCATGGAA  
ATTTCTATT GACTCTGCGC CATAGTGGG AACGTGACTG TCATCTCGT GGTCAAGCTG AACCCAGCC TGACAGACCAC  
CACCTTCTAT TTCAATTGCT CTCTAGCCCT GGCTGACATT GCTGTTGGG TGCTGGTCAT GCCTTGGCC ATTGTGTCA  
GCCTGGCAT CACAATCCAC TTCTACAGCT GCCTTTTAT GACTTGCTA CTGCTTATCT TTACCCACGC CTCCATCATG  
TCCTGCTGG CCATCGCTGT GGACCGATAC TTGCGGGTCA AGCTTACCGT CAGATACAAG AGGGTCACCA CTCACAGAAG  
AATATGGCTG GCCCTGGGCC TTGCTGGCT GGTGTCATT CTGGTGGAT TGACCCCAT GTTGGCTGG AACATGAAAC  
TGACCTCAGA GTACCACAGA AATGTACCT TCCTTTCATG CCAATTTGTT TCCGTATGA GGATGGACTA CATGGTATAC  
TTAGCTTCC TCACCTGGAT TTTCATCCCC CTGGTTGCA TGTGCGCCAT CTATCTTAC ATCTTTTACA TCATTGGAA  
CAAATCAGT CTGAATTTAT CTAATCCAA AGAGACAGGT GCATTTTATG GACGGGAGT CAAGACGGCT AAGTCTTGT  
TTCTGTTCT TTTCTTGTG GCTCTGTCAT GGCTGCCTT ATCTCTCAT AACTGCATCA TCTACTTAA TGGTGAGGTA  
CCACAGCTTG TGCTGTACAT GGGCATCCTG CTGTCCCATG CCAATCCAT GATGAACCT ATCGTCTATG CCTATAAAAT  
AAAGAAGTTC AAGGAAACCT ACCTTTTGT CCTCAAAGCC TGTGTGGTCT GCCATCCCTC TGATTCTTG GACACAAGCA  
TTGAGAAGAA TTCTGAGTAG TTATCCATCA GAGATGACTC TGCTCATG ACCTTCAGAT TCCCATCAA CAAACACTTG  
AGGGCTGTA TGCCTGGGCC AAGGGATTT TACATCCTTG ATTACTTCCA CTGAGGTGGG AGCATCTCCA GTGCTCCCA  
ATTATATCT CCCCACCTCA CTACTCTCT CCTCCACTTC ATTTTCTT TGTCCTTCT CTCTAATCA GTGTTTGGGA  
GGCCTGACTT GGGGACAACG TATTATTGAT ATTATTGTCT GTTTTCTT TCCCAATAG AAGAATAAGT CATGGAGCCT  
GAAGGGTGCC TAGTTGACTT ACTGACAAAA GGCTCTAGT GGGCTGAACA TGTGTGTTG GGTGACTCAT TTCCATGCCA  
TTGTGGAAT GAGCAGAGAA CCTGCTCTG GAGGATGCCT AGGAGATGT GGGAACAGAA GAAATAAACT GAGTTAAGG  
GGGACTTAA CTGCTGAATT C CAGATTCACA AACTGCAGGA CTGGGCAGG AGCAGACAGT GAGCAACGC  
CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTAGGGGACA GTTGCTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT  
CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGTAA AACACCGGAG ACTAATTCCT GCCCTGCCA ATTTGACAGG  
GAGCATGGCT GTGAGGATGG GGTGAATCA CGACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTGCT  
TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCTGGG GGGAGGGAGA GGAGTGACTG AGCTTCCCTC  
CCGTGTGTT TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG  
AGTGACAAAG TGAGTTGTTG CCCTGGGTTT CTTAATCTA TTCAGCTAGA ACTTGAAGG ACAATTTCTT GCATTAATAA  
AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCT CACTGATGGA CAAGGAGGTC  
TGTGCCAAAG AAGAATCCAA TAAGCACATA TTAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCAAG  
AAAGAGAAGG AGCCATCTCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC  
TGTTCGACGA GACGGTCGAG CAGGGTGTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGTTTCCA GCTCAACCAA  
TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTCCCTT TTATGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA  
CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAAGT GGATATGTTT

ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC  
ACCAGTGTCT GGCACACAGT AGGTGCTCAT TGGTCCCTT CCACCTGTCA TTCCCACCAC CTGAGGCC-CAACCGCCAC  
ACACACAGGA GCATTGGAG AGAAGGCCAT GTCTCAAAG TCTGATTGT GATGAGGCAG AGGAAGATAT, TTCTAATCGG  
TCTTGCCAG AGGATCACAG TGCTGAGACC CCCCACCACC AGCCGGTACC TGGGAAGGGG GAGAGTGCAG GCCTGCTCAG  
GGACTGTTCC TGTCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCAGT ATGAGCCCTA  
GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCATTGAT AAATGAATAT  
TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG  
CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA  
ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG  
GAGGGCTAGA ACCTAGAAGG GCTAGAACCT GGAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG  
GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC  
AGAACCTGGA GGGCTAGAAC CTGGAAGGGC TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCGG CAGGCTAGAA  
CCTGGCAAGC TAGAACCTGG AGGGAATGAA CCTGGAGGGC TAGAACCTGG AGAATGAGAA AAATTTACAT GGCAAAGAGC  
CCATAAATCC TGACCAATCC AACTCTGAAT TTAAAGCAA AAGCGTGAAA AAAAAGATTC CTCCTTACC CCAACCCAC  
TCTTTTTTCC CACCACCCAC TCTCCTCTGC CTCAGTAAGT ATCTGGAGGA AGAAAACAGG TGAAAGAAGA AGTAAAAACC  
ATTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAAAA AAAAAGAGGC TGTGTTTTGT  
CACACAGGGC AGTCATTAG CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCCG CAATGGCCAT  
GTGGGGATCC ACACCTGGTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT  
AAAGAACATC TGTCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAACA GGAAGCATTT CACATCCAAA CGAGAAAATC  
ATGTAACAT GTGTCTTTT TGTAGAGCAT AATAATGGA TGAGGTTTTT GCAAAAAAAAAA AAAAAAAAAA ATGCCGCCCT  
CCATCTCAGC TTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA CGTGCTGGTG  
ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTCTCG CTGGCGGTGG CTGATGTGGC  
CGTGGGTGCC CTGGTCATCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTCATGGTTG  
CCTGTCCGT CCTCATCTC ACCCAGAGCT CCATCTGGC CTGCTGGCA ATTGCTGTGG ACCGCTACCT CCGGGTCAAG  
ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCAGGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC TCTCCTCTGT  
GGTGGGACTG ACCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC AGCATGGGGG  
AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT GTGGGTGCTG  
CCCCCGCTT TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA AGGTGTCGGC  
CTCTCCGGC GACCCGAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCTC TTCCTCTTG  
CCCTCAGCTG GCTGCCTTG CACATCTCA ACTGCATCAC CCTCTTCTG CCGTCTGCC ACAAGCCCAG CATCCTTACC  
TACATTGCCA TCTTCTCAC GCACGGCAAC TCGGCCATGA ACCCATTGT CTATGCCTC CGCATCCAGA AGTTCCGCGT  
CACCTTCTT AAGATTGGA ATGACCATT CCGTGCCAG CCTGCACCTC CCATTGACGA GGATCTCCA GAAGAGAGGC  
CTGATGACTA G ATGAGTGCA GAAGTGTA GGTGCTGT TCTGAATCCC AGAGCCTCT CTCCCTCTGT GAGGCTGGCA  
GGTGAGGAAG GGTTAACCT CACTGGAAGG AATCCCTGGA GCTAGCGGT GCTGAAGGCG TCGAGGTGTG GGGCACTTG  
GACAGAACAG TCAGGCAGCC GGGAGCTCTG CCAGCTTTGG TGACCTTGGG CCGGGCTGGG AGCGTCTGG CCGGAGCCGG  
AGGACTATGA GCTGCCGCG GTGTCCAGA GCCCAGCCA GCCCTACGG CGCGGCCCGG AGCTCTGTC CTGGAACCT  
TGGGCACTGC CTCTGGGACC CTGCGCGCC AGCAGGCAGG ATGGTGCTT CCTCGTCCC CTGGTGCCC GTCTGCTGAT  
GTGCCAGCC TGTGCCGCC ATGCCGCCCT CCATCTCAGC TTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC  
CTGGTCTCTG TGCCCGGAA CTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT  
CATCGTCTG CTGGCGGTGG CTGATGTGGC CTGGGTGCC CTGGTCATCC CCCTCGCCAT CCTCATCAAC ATTGGGCCAC  
AGACCTACTT CCACACCTGC CTCATGGTTG CTGTCCGGT CCTCATCTC ACCCAGAGCT CCATCTGGC CTGCTGGCA  
ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCAGGGG CGGCGGTGGC  
CATAGCCGGC TGCTGGATCC TCTCCTCTGT GGTGGGACTG ACCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC  
GGGCTGGGC AGCCAACGGC AGCATGGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG  
GTCTACTTCA ACTTCTTTGT GTGGGTGCTG CCCCCTTCT TCCTCATGGT CCTCATCTAC CTGGAGTCT TCTACCTAAT  
CCGCAAGCAG CTCAACAAGA AGGTGTCGGC CTCTCCGGC GACCCGAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA  
AGTCGCTGGC CCTCATCTC TTCCTCTTG CCCTCAGCTG GCTGCCTTG CACATCTCA ACTGCATCAC CCTTCTGCT  
CCGTCTGCC ACAAGCCCAG CATCCTTACC TACATTGCCA TCTTCTCAC GCACGGCAAC TCGGCCATGA ACCCATTGT  
CTATGCCTC CGCATCCAGA AGTTCCGCGT CACCTTCTT AAGATTGGA ATGACCATT CCGTGCCAG CTGCACCTC  
CCATTGACGA GGATCTCCA GAAGAGAGGC CTGATGACTA GACCCCGCT TCCGCTCCA CCAGCCACA TCCAGTGGGG  
TCTCAGTCCA GTCCTCATAT GCCCCTGTC CCAGGGTCT CCCTGAGCT GCCCAGCTG GGCTGTGGC TGGGGCATG  
GGGGAGGCTC TGAAGAGATA CCCACAGAGT GTGGTCCCTC CACTAGGAGT TAACTACCCT ACACCTCTGG GCCCTGCAGG  
AGGCTGGGA GGGCAAGGT CTACGGAGG GACCAGGTGT CTAGAGGCAA CAGTGTCTG AGCCCCACC TGCTGACCA  
TCCCATGAGC AGTCCAGCGC TTCAGGGCTG GGCAGTCTT GGGGAGGCTG AGACTGCAGA GGAGCCACT GGGCTGGAG  
AAGGTGCTTG GGCTTCTGCG GTGAGGCAGG GGAGTCTGCT GTCTTAGAT GTTGGTGGTG CAGCCCCAGG ACCAAGCTTA  
AGGAGAGGAG AGCATCTGCT CTGAGACGGA TGGAAGGAGA GAGTTGAGG ATGCACTGGC CTGTTCTGTA GGAGAGACTG  
GCCAGAGGCA GCTAAGGGG AGGAATCAAG GAGCTCCGT TCCACCTCT GAGGACTCTG GACCCAGGC CATACAGGT  
GCTAGGGTGC CTGCTCTCT TGCCCTGGC CAGCCAGGA TTGTACGTGG GAGAGGCAGA AAGGGTAGT TCAGTAATCA  
TTCTGATGA TTGCTGGAG TGCTGGCTCC ACGCCTGGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCT CAAACAGCCA

CGAGGTGGTA GCTCTGAGCC CTCCTTCTTG CCCTGAGCTT TCCGGGGAGG AGCCTGGAGT GTAATTACCT GTCATCTGGG  
CCACCAGCTC CACTGGCCCC CGTTGCCGGG CCTGGACTGT CTAAGGTGAC CCCATCTCTG CTGCTTCTGG GCCTGATGGA  
GAGGAGAACA CTAGACATGC CAACTCGGGA GCATTCTGCC TGCCTGGGAA CGGGGTGGAC GAGGGAGTGT CTGTAAGGAC  
TCAGTGTTGA CTGTAGGCGC CCCTGGGGTG GGTTAGCAG GCTGCAGCAG GCAGAGGAGG AGTACCCCC TGAGAGCATG  
TGGGGGAAGG CTTGCTGTC ATGTGAATCC CTCAATACCC CTAGTATCTG GCTGGGTTTT CAGGGGCTTT GGAAGCTCTG  
TTGCAGGTGT CCGGGGGTCT AGGACTTTAG GGATCTGGGA TCTGGGGAAG GACCAACCCA TGCCCTGCCA AGCCTGGAGC  
CCCTGTGTTG GGGGGCAAGG TGGGGGAGCC TGGAGCCCT GTGTGGGAGG GCGAGGCGGG GGAGCCTGGA GCCCTGTGT  
GGGAGGGCGA GCGGGGGAT CCTGGAGCCC CTGTGTCGGG GGGCGAGGGA GGGGAGGTGG CCGTCGGTTG ACCTTCTGAA  
CATGAGTGTC AACTCCAGGA CTGCTTCCA AGCCCTTCCC TCTGTTGGAA ATTGGGTGTG CCCTGGCTCC CAAGGGAGGC  
CCATGTGACT AATAAAAAAC TGTGAACCCT CGCATTTGTG TTTTAATAAA AGAATCTGGA AGATAAATAG TCTTGAAGAG  
AGACAAAGGA AGGAAAATTT AAATCCTTAG ATTCAAGCAG AAGAATTCCA TGTGGAAGGT TTGGGTTGTT GTTGTGTTG  
TTTGGTGTGT TTTTGTITT TTTGTITTT TGTITTTTT TGAGATGGAG TCTCGCTGTG TTACCGGGAG CGACAGAGCC  
GCACGGCCGA GTCGAGTCCC AGCCAGCTAC CATCCCTCTG GAGCTTACCG GCCGGCCTTG GCTTCCCCAG GAATCCCTGG  
AGCTAGCGGC TGCTGAAGGC GTCGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCAGC CGGGAGCTCT GCCAGCTTGT  
GTGACCTTGG GTGCTTGCC CTGCCCCCTT GGTGCCCGTC TGCTGATGTG CCCAGCCTGT GCCCGCCATG CCGCCCTCCA  
TCTCAGCTTT CCAGGCCGCC TACATCGGCA TCGAGGTGCT CATCGCCCTG GTCTCTGTGC CCGGGAACGT GCTGGTGATC  
TGGGCGGTGA AGGTGAACCA GCGCTGCGG GATGCCACCT TCTGCTTCAT CGTGTGCTG GCGGTGGCTG ATGTGGCCGT  
GGGTGCCCTG GTCATCCCC TCGCCATCCT CATCAACATT GGGCCACAGA CCTACTTCCA CACCTGCCTC ATGGTTGCC  
GTCCGGTCTT CATCTCACC CAGAGCTCCA TCCTGGCCCT GCTGGCAATT GCTGTGGACC GCTACCTCCG GGTCAAGATC  
CCTCTCCGGT ACAAGATGGT GGTGACCCCC CGGAGGGCGG CGGTGGCCAT AGCCGGCTGC TGGATCCTCT CCTTCGTGGT  
GGGACTGACC CCTATGTTT GCTGGAACAA TCTGAGTGC GTGGAGCGGG CCTGGGCAGC CAACGGCAGC ATGGGGGAGC  
CCGTGATCAA GTGCGAGTTC GAGAAGGTCA TCAGCATGGA GTACATGGTC TACTTCAACT TCTTGTGTG GGTGCTGCCC  
CCGCTTCTC TCATGGTCT CATCTACCTG GAGGTCTTCT ACCTAATCCG CAAGCAGCTC AACAAGAAGG TGTGGCCTC  
CTCCGGCGAC CCGCAGAAGT ACTATGGGAA GGAGCTGAAG ATCGCCAAGT CGTGGCCCT CATCTCTTC CTCTTTGCC  
TCAGCTGGCT GCCTTTGCAC ATCCTCAACT GCATCACCCT CTTCTGCCG TCCTGCCACA AGCCAGCAT CCTTACCTAC  
ATTGCCATCT TCCTCAGCA CGGCAACTCG GCCATGAACC CCATTGTCTA TGCTTCCG ATCCAGAAGT TCCGCGTCAC  
CTTCTTAAG ATTTGGAATG ACCATTTCCG CTGCCAGCT GCACCTCCCA TTGACGAGGA TCTCCAGAA GAGAGGCCTG  
ATGACTAGAC CCCGCTTCC GCTCCACCG CCCACATCCA GTGGGGTCTC AGTCCAGTCC TCACATGCCC GCTGTCCAG  
GGGTCTCCCT GAGCTGCCC CAGCTGGGCT GTTGGCTGGG GGCATGGGG AGGCTCTGAA GAGATACCA CAGAGTGTGG  
TCCCTCCACT AGGAGTTAAC TACCCTACAC CTCTGGGCC TGCAGGAGG CTGGGAGGG AAGGGTCTA CGGAGGGACC  
AGGTGTCTAG AGGCAACAGT GTTCTGAGCC CCCACCTGCC TGACCATCCC ATGAGCAGTC CAGAGCTTCA GGGCTGGGA  
GGTCTGGGG AGGCTGAGAC TGCAGAGGAG CCACCTGGGC TGGGAGAAGG TGCTTGGGCT TCTGCGGTGA GGCAGGGAG  
TCTGCTTGTG TTAGATGTTG GTGGTGACG CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA  
AGGAGAGAGG TTAGGATGC ACTGGCCTGT TCTGTAGGAG AGACTGGCCA GA CCCAGCCCC AGGCTCAGAA  
GCGGAGGGC GAGGCGCGGT CCGGGCGCTA TGCCATGCC CGGCGGTCT CACGCGGTG CCCCTCGCCC GCGCGCCTT  
CGGTAGGGGG CGCCGGGGC CCAGCTGGCC CGGCATGCT GCTGGAGACA CAGGACGCG TGTACGTGGC GCTGGAGCTG  
GTCATCGCCG CGCTTTCGGT GCGGGGCAAC GTGCTGGTGT GCGCCGCGGT GGGCACGGC AACACTCTGC AGACGCCAC  
CAACTACTT CTGGTGCCC TGGCTGCGC CGACGTGGC GTGGGGCTCT TCGCCATCCC CTTTGCCATC ACCATCAGC  
TGGGCTTCTG CACTGACTTC TACGGCTGCC TCTTCTCGC CTGCTTCGTG CTGGTGCTCA CGCAGAGCTC CATCTCAGC  
CTTCTGGCCG TGGCAGTCA CAGATACCTG GCCATCTGTG TCCGCTCAG GTATAAAGT TTGGTCACG GACCCGAGC  
AAGAGGGGTC ATTGCTGTCC TCTGGGTCT TGCCTTTGGC ATCGGATTGA CTCCATTCT GGGGTGGAAC AGTAAAGACA  
GTGCCACCA CAACTGCACA GAACCTGGG ATGGAACCAC GAATGAAAGC TGCTGCCTT TGAAGTGTCT CTTGAGAAT  
GTGGTCCCA TGAGCTACAT GGTATATTTC AATTTCTTG GGTGTGTTCT GCGCCACTG CTTATAATGC TGGTGATCTA  
CATTAAATC TTCTGGTGG CCTGCAGGCA GCTCAGCG ACTGAGCTGA TGGACCACTC GAGGACCACC CTCACGGG  
AGATCCATGC AGCCAAGTCA CTGGCCATGA TTGTGGGGAT TTTTGCCCTG TGCTGGTTAC CTGTGCATGC TGTAACTGT  
GTCACCTTT TCCAGCCAGC TCAGGGTAAA AATAAGCCA AGTGGGCAAT GAATATGGCC ATTCTTCTGT CACATGCCAA  
TTCAGTTGTC AATCCCATG TCTATGCTTA CCGGAACCGA GACTTCCGT ACCTTTTCA CAAAATTATC TCCAGGTATC  
TTCTCTGCCA AGCAGATGTC AAGAGTGGGA ATGGTCAGG TGGGTACAG CCTGCTCTG GTGTGGGCT ATGATCTAGG  
CTCTGCCTC TTCCAGGAGA AGATACAAAT CCACAAGAA CAAAGAGGAC ACGGCTGGT TTCATTGTGA AAGATAGCTA  
CACCTCAAA GGAAATGGAC TGCCTCTCT GAGCACTCC CTGGAGCTAC CACGTATCTA GCTAATATGT ATGTGTCAGT  
AGTAGCACA AGGATTGACA AATATATTTA TGATCTATTC AGCTGCTTT ACTGTGTGGA TTATGCCAAC AGCTGAATG  
GATTCTAACA GACTCTTTG TTTTAAAAG TCTGCCTGT TTATGGTGG AAATTACTGA AACTATTTA CTGTGAAACA  
GTGTGAACTA TTATAATGCA AATACTTTT AACTTAGAGG CAATGGAAAA ATAAAAGTTG ACTGTACTAA AAATGTATAC  
TTGTTGCCAG GAAGGTGACC TAAAAATTA AAAGTATAAT TATTCGGCC GGCATGGTGG CTCACACCTG TAATTCCAGC  
ACTTTGGGAG GCAAGGCAG GCGGATCAG AGGTGAGGAG TTCAAACCA GCCTGTCCA TATAGTG GGGCAATTTG  
TTAGTTATCC GCGGCCACCA AGACGCGGCA CGGCGCTGG ACCGGAGGG CCGCGCGCG GCGGAACTT TGGGCTCGG  
CGAGTGGGTG GTGCTCCGCC CAGCCGAGA CGGGCGGGC CGCGGGCCAA TGGGTGCCG CTCTGGCCG CGGGGGGCC  
CGACCGGTG GTCCCGGCCA CCAGCGCCCC AGCCCGAGG CTCAGAAGCG GCAGGCGGAG GCGCGGTCCG GCGGCTATG  
CCATGCCCG GGGTCTCAC GCGGCTGCC CTGCCCCG GCGCTTCGG TAGGGGGCG CCGGGGCCA GCTGGCCCG

CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT GGAGCTGGTC ATCGCCGCGC TTTCGGTGGC GGGCAACGTG  
CTGGTGTGCG CCGCGGTGGG CACGGCGAAC ACTCTGCAGA CGCCACCAA CTACTTCCTG GTGTCCCTGG ETGCGGCCGA  
CGTGGCCGTG GGGCTCTTCG CCATCCCCTT TGCCATCACC ATCAGCCTGG GCTTCTGCAC TGACTTCTAC GGCTGCCTCT  
TCCTCGCTG CTTCGTGCTG GTGCTCACGC AGAGCTCCAT CTTAGCCTT CTGGCCGTGG CAGTCGACAG ATACCTGGCC  
ATCTGTGTCC CGCTCAGGTA TAAAAGTTTG GTCACGGGGA CCCGAGCAAG AGGGGTCAATT GCTGTCTCT GGTCTCTTC  
CTTTGGCATC GGATTGACTC CATTCTGGG GTGGAACAGT AAAGACAGTG CCACCAACAA CTGCACAGAA CCCTGGGATG  
GAACCACGAA TGAAAGCTGC TGCCTTGTGA AGTGTCTCT TGAGAATGTG GTCCCATGA GCTACATGGT ATATTTCAAT  
TTCTTTGGGT GTGTTCTGCC CCCACTGCTT ATAATGCTGG TGATCTACAT TAAGATCTTC CTGGTGGCCT GCAGGCAGCT  
TCAGCGCACT GAGCTGATGG ACCACTCGAG GACCACCCTC CAGCGGGAGA TCCATGCAGC CAAGTCACTG GCCATGATTG  
TGGGGATTT TGCCCTGTGC TGGTTACCTG TGCATGCTGT TAACTGTGTC ACTCTTTCC AGCCAGCTCA GGGTAAAAAT  
AAGCCCAAGT GGGCAATGAA TATGGCCATT CTTCTGTCAC ATGCCAATTC AGTTGTCAAT CCCATTGTCT ATGCTTACCG  
GAACCGAGAC TTCCGCTACA CTTTTCACAA AATTATCTCC AGGTATCTTC TCTGCCAAGC AGATGTCAAG AGTGGGAATG  
GTCAGGCTGG GGTACAGCCT GCTCTCGGTG TGGGCCTATG ATCTAGGCTC TCGCCTCTTC CAGGAGAAGA TACAAATCCA  
CAAGAAACAA AGAGGACACG GCTGGTTTTT ATTGTGAAAG ATAGCTACAC CTCACAAGGA AATGGACTGC CTCTCTTGAG  
CACTTCCCTG GAGCTACCAC GTATCTAGCT AATATGTATG TGTCAAGT AGGCTCCAAG GATTGACAAA TATATTTATG  
ATCTATTAG CTGCTTTTAC TGTGTGGATT ATGCCAACAG CTTGAATGGA TTCTAACAGA CTCTTTTGT TTTAAAGTC  
TGCCTTGTG ATGGTGGAAA ATTACTGAAA CTATTTTACT GTGAAACAGT GTGAATATT ATAATGCAAA TACTTTTTAA  
CTTAGAGGCA ATGGA AAAAT AAAAGTTGAC TGTACTAAAA ATG GAATTCCTAG ATGGGCAGAG GTGGCTGGGC  
TGGTGACCCT AAGTGTGTCT CTTGCTTTA TTCTCTTAG TGGGTATTTC TTTCATGTGG TATCTGCCT ACAGCATGCT  
GTGTTTGAC ACAAAACCCT TTCCTGGTT TCTCTGACCC AGCTGAGATG GACTGATTCC AAAAGAACTC ACCTATGTAC  
TGGGGTAGGG GAGGGAGGGT TTTTGCAGT ATTTAACTAA GGTTCAAAGA GTGCTATATA GTGAGAAAGG CTCTTTTTT  
TTTTTTTTT TTTTGGCA GAGTGTGCC TCCTAGAAAT TTCTTTGGT AACTCTCTC TCTGAAGCAC AGATAAAGAA  
AACAAATACA GTAGAAACAT TTATGAGGGA CACATTGGAG GCCGATGAAG CTTTCAAGT TCCAGCAGTG CAGGGATGTG  
GGCAGAACTG ACATTGGAAT AACTAGAAAT GATGGAAAT CAGTTGGAGA GGAAGTCCCT TTTAATGTC TGGGGAGTCT  
GCTCAGGGAG AAATGACAAG TCTGGCGGGG ACAAGTATGG GATTGGTAA GACTTGGATC AACTTGGAT ACAGGGTGGG  
GGTCGGGAGT GGAATCAATG AATGATGCCA GAGCAGATCA ACTAACAGA GGACCCTGAT GAGCCCCAGG CAGAGGCGTC  
TCCCTATGC CCCACTCTGA AGTGTGTGTT AGTAAACACC AGAAGCCAT TGTGTTACT GCTGAATTT ATTTTGGCT  
GTACATATT AGATGCTTAA GGTAAAAATG ATAAAGCCCT CAAGCCACTG TGTGGGTTT GGTCCAAGTG TTCTTCTG  
CTGCTCTCT AACACGCTG GTTAAATAA TCCCTTTGGA TGGTGTGAG AAGCACCTGA ACCAAGTGGG TCCCAATA  
ACAATGGCGT GCAAGTGTCT GGTCCCAGA AGTTGGTGAC TAGGTAAGCA GCTTCAGGGA GAGGGGGCTG ATTCACAGAC  
AGTCGCTGT TCTGCGGGG ATGGGGCTGA GGCTTGGGGA ATGTGGGAG GAGGATATGC CATTGATTG TGTGACAC  
GTTCTTTCC CTCTTTCTG TATGTCTGGT CATTCTGCTA TTCTGCTGT CCTCACATAG GTTGGACATT GGCCGGCTGC  
CAGCATAAGT GCCAGTGTGA TTTGCTAGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG  
AGGTGCTGAG TTTTGGCCT TCTGAGCAGG GAATCTTTC TTATCCCTT GACCAAGGAT CTTTGTGCA AAGGCTGGGT  
ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT AAGGTAGGA GGCTGCCACC  
AAAGTCTCT TTTGTTCCT CTGCTTCTCC CGTTTGCTC CTTATCATGA GATCTTTTG CTAAGCTGGC AGAAAGATTG  
CATAGTCAGT GCTTCCAGCT CTGCTCCAC CTGATCCTGC ACTGCTCTT GGTCCCTGAA TGAATGAACT CTGATACCA  
ATCTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC TTCTGCTCT TCCATCTTT TGCTGAGAGT TCTGAGCTCT  
GTACTCTCTC TTGGCCATC TCACTTCTG AAACACCCT GAAGAGGGT GCTTATCTTG ATGGAATCA AAAAGCCAAA  
AAGCTGCAGG CAGAGGCGTT GAGGACATCT GTTGGGGAA CTAAGAGCAG CAGCACTTC AGATTCACTC CATATAGAGC  
TGTCTACAG CATTCTGGA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT GGAAGTGACC CACCTGTGAT GAGCCCTTC  
TAAGGAGAAG GGTTCGAAG AGATACCCC ACCAGAAAAG GGTAGGAATG AGCAAGTTGG GAATTTAGA CTGTCACTGC  
ACATGGACCT CTGGGAAGAC GTCTGGCGAG AGTAGGCCC ACTGGCCCTA CAGACGGATC TTGCTGGCTC ACCTGTCCCT  
GTGGAGGTT CCCTGGGAAG GCAAGATGCC CAACAACAGC ACTGCTCTGT CATTGGCCAA TGTACCTAC ATCACCATGG  
AAATTTTCAT TGGACTCTGC GCCATAGTGG GCAACGTGCT GGTCTCTGC GTGGTCAAGC TGAACCCAG CCTGCAGACC  
ACCACCTCT ATTTCAATGT CTCTAGCC CTGGCTGACA TTGCTGTTGG GGTGCTGGTC ATGCCTTGG CCATTGTTGT  
CAGCCTGGC ATCACAATCC ACTTCTACAG CTGCTTTT ATGACTGCC TACTGCTTAT CTTTACCCAC GCCTCCATCA  
TGTCTTGTG GGCCATCGCT GTGGACCGAT ACTTGGGGT CAAGCTTACC GTCAGGTAGC CTGCGGCTG GGGTGGCAG  
CAATTGAGGC AGCTGGGAAA TGAGGCTACA AAGCCAGAGCS CTGCTGAAT TTATTTTGA CTGTACATAT TTAGATGCTT  
AAGGTAAAA TGATAAGCC CTCAAGCCAC TGTGTGGGT GGTCCAAGT GTTCTTGTG CTGCTCTC TAACAGCCT  
GGTAAAAATA ATCCCTTGG ATGGTGTGA GAAGCACCTG AACCAAGTGG GTCCCAAAAT AACTATGGCG TGCAAGTGC  
TGGTCCCAG AAGTTGGTGA CTAGTAAGC GACTCAGGGA GAGGGGCTGA TTCCAGACA GTCGCTGTT CTGCTGGGA  
TGGGGCTGAG GCTTGGGGAA TGTGGGCAGG AGGATATGCC ATTTGATTCT GTTGACACG TTCTTTTCC TTCTTCTGT  
ATGTCTGGTC ATTCTGCTAT TCTGCTTC CTCACATAGG TTGGACATTG GCCGGCTGCC AGCATAAGTG CCAGTGTGAT  
TTTGTAGGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTGGCCT  
TCTGAGCAGG GAATCTTTC TTATCCCTT GACCAAGGAT CTTGCTCCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG  
CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT AAGGTAGGA GGCTGCCACC AAAGTCTCT TTTGTTCCT  
CTGCTTCTC CGTTGCTC CTTATCATGA GATCTTTTG CTAAGCTGGC AGAAAGATTG CATAATCAGT GCTTCCAGCT  
CCGCTCCAC CTGATCCTGC ACTGCTCTT GGTCCCTGAA TGAATGAACT CTGATACCA ATCTGTCTC GAGCCTCTC

TATGCCACTC ATGGCTCCTC TTCTGCTCTT TCCATCTTTT TGCTGAGAGT TACTGAGCTC TGTACTTCCT CTGGCCCAT  
CTCATTCTCT GAAACACCCC TGAAGAGGGT TGCTTATCTT GATGGAATC AAAAAAGCCAA AAAGCTGCAG GCAGAGGCGT  
TGAGGACATC TGTGTTGGGA ACTAAGAGCA GCAGCACTTT CAGATTCACT CCATATAGAG CTGTCTACA GCATTCTGGA  
AACTTGAGGA TGTGCGGTGC ATAAAGGGGC TGAAGTGAC CCACCTGTGA TGAGCCCTTT CTAAGGAGAA GGGTTTCCAA  
GAGATACCCC CACCAGAAAA GGGTAGGAAT GAGCAAGTTG GGAATTTTAT ACTGTCACTG CACATGGACC TCTGGGAAGA  
CGTCTGGCGA GAGCTAGGCC CACTGGCCCT ACAGACGGAT CTGTCTGGCT CACCTGTCCC TGTGGAGGTT CCCCTGGGAA  
GGCAAGATGC CCAACAACAG CACTGCTCTG CGAATTCGGG GGACATCTGT TTGGGGAAGT AAGAGCAGCA GCACTTTTACG  
ATTCACTCCA TATAGAGCTG TCCTACAGCA TTCTGGAAC TTGAGGATGT GCGGTGCATA AACGGGCTGG AAGTGACCCA  
CCTGTGATGA GCCCTTTCTA AGGAGAAGGG TTTCCAAGAG ATCACCCAC CAGAAAAGGG TAGGAATGAG CAAGTTGGGA  
ATTTTAGACT GTCAGTGCAC ATGGACCTCT GGGAAGACGT CTGGCGAGAG CTAGGCCAC TGGCCCTACA GACGGATCTT  
GCTGGCTCAC CTGTCCCTGT GGAGGTTCCC CTGGGAAGGC AAGATGCCCC ACAACAGCAC TGCTCTGTCA TTGGCCAATG  
TTACCTACAT CACCATGGAA ATTTTCATTG GACTCTGCGC CATAGTGGGC AACGTGCTGG TCATCTGCGT GGTCAAGCTG  
AACCCAGCC TGCAGACCAC CACCTTCTAT TTCATTGTCT CTCTAGCCCT GGCTGACATT GCTGTTGGGG TGCTGGTCAT  
GCCTTTGGCC ATTGTTGTCA GCCTGGGCAT CACAATCCAC TTCTACAGCT GCCTTTTAT GACTTGCTTA CTGCTTATCT  
TTACCCACGC CTCATCATG TCCTTGCTGG CCATCGCTGT GGACCGATAC TTGCGGGTCA AGCTTACCGT CAGATACAAG  
AGGGTACCA CTCACAGAAG AATATGGCTG GCCTGGGGC TTTGCTGGCT GGTGTCATTC CTGGTGGGAT TGACCCCAT  
GTTTGCTGG AACATGAAAC TGACCTCAGA GTACCACAGA AATGTCACCT TCCTTTCATG CCAATTTGTT TCCGTATGA  
GGATGGACTA CATGGTATAC TTCAGCTTCC TCACCTGGAT TTTTATCCCC CTGGTTGTCA TGTGCGCCAT CTATCTTGAC  
ATCTTTTACA TCATTCGGAA CAACTCAGT CTGAACCTAT CTAACCTCAA AGAGACAGGT GCATTTTATG GACGGGAGTT  
CAAGACGGCT AAGTCCTTGT TTCTGGTTCT TTTCTGTTT GCTCTGTCTT GGCTGCCCTT ATCTCTCATC AACTGCATCA  
TCTACTTTAA TGGTGAGGTA CCACAGCTTG TGCTGTACAT GGGCATCCTG CTGTCCCATG CCAACTCCAT GATGAACCTT  
ATCGTCTATG CCTATAAAAT AAAGAAGTTC AAGGAAACCT ACCTTTTGAT CCTCAAAGCC TGTGTGGTCT GCCATCCCTC  
TGATCTTTG GACACAAGCA TTGAGAAGAA TTCTGAGTAG TTATCCATCA GAGATGACTC TGTCTCATTG ACCTTCAGAT  
TCCCCATCAA CAAACACTTG AGGGCCTGTA TGCCTGGGCC AAGGGATTTT TACATCCTTG ATTACTTCCA CTGAGGTGGG  
AGCATCTCCA GTGCTCCCCA ATTATATCTC CCCCACCTCA CTACTCTCTT CCTCCACTTC ATTTTTCCTT TGTCTTTCT  
CTCTAATTCA GTGTTTGGGA GGCCTGACTT GGGGACAACG TATTATTGAT ATTATTGTCT GTTTTCCTTC TTCCCAATAG  
AAGAATAAGT CATGGAGCCT GAAGGGTGCC TAGTTGACTT ACTGACAAAA GGCTCTAGTT GGGCTGAACA TGTGTGTGGT  
GGTGACTCAT TTCCATGCCA TTGTGGAATT GAGCAGAGAA CCTGCTCTCG GAGGATGCCT AGGAGATGTT GGGAAACAGAA  
GAAATAAACT GAGTTTAAAG GGGACTTAAA CTGCTGAATT C AAATGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTAA  
ATGAATGCTT TAAGCCGGGT GCAGTGCTC ACATCTGTAA TCCAGCACT TTGGAGCCGA GCGGGTGGAT TGTGTGAGGT  
CAGGAGTTTC AGACCAACCT GGCCAACATG GCAAAACCTC ACTCTCTACC AAAAAATCAA AAATTAGCCA GGCATGGTGG  
CAGGCACCTG TGATCCCAGC TACTCAGGAG GCTGAGACAG GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC  
AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA GACTCCGTCT CAAAAAAAAA AAAAAAAAAA AAAAAATTAC  
GCTTCAAACA CATGATCTCT CACCACTGTT GAATTTTCTT TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT  
AGGTCTTCTT TTCCCTCTGC AAACCTCCCTG CCTGGAAGGT TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTTGCAAGTG  
TCCAAACCTT GATCCCAGCT GTGCTTAGGG GTTCTGCAA ACCTTTTCCA GGTGTTAATT ACCTCCCACT TCATTTCTCTG  
TTTACCAACT CAGCTTTTGG TTTTAGTGTG TTTGAATTCC CTGAACTGAC CGTTGTCTGA TCTCCACCTC CCAACTGAAT  
TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT  
ACATTTCATG ACACACACAC ACCACATAC CCACACATGC ACACACACAC ACACACCCGC ACTCACACAC TTGGACATGC  
ATAGACCACA GCTTTCCACA CCCTTCTAG ACAGGGGTCA CTGGGTATCC TGGAGAGAGT GTGAAGTCTT GGAATGGAAA  
GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA CAAGTACCA CCAACCCATC TGCGCTTGT TTACTCTCTC  
TGTGAGGCAA GCACAGAGCC CATGCTGCC CCCCTGGATG GGAGTGATGT GAACTTGAA GGGCGGTGAG AGCAAGGGTC  
GGGAATGGAA GGCCCTTGGG AAAAAAGGCC CTTTCAACTA GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC  
CTTGTAATTG GTAAGCCAAG CCCGAAGGGA CTGGAATAC TCAGATGTGT CTGTCTCCCT TATTAGGTTT AAAGTCCCTC  
AAGACCCTGT CTCCATCACA GTGCTCCAGT CCAGACCCCT CCTCTGAGCT CCAGACCCCTG CTGGACCCAA CCAGCCCTAT  
GGGGTCGCAT CCCCACCTGC CTGGAATTCT CCAAAGAACC TCCCCTTAA CAGTTCCAGC CTTTAAAGT TCCAGTCTAA  
ACACATGACC TTTCTCTCT AAATCAGCCC CCCATCTCTG CTTTTCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC  
TGTCTCACC CCATCCATGT CCAATCAAGC ACTAGGCATG TCAGGTTTAC CCTCTAAACT CCTCTGGAAT CCAGTCTCTC  
AGTCTCCATC ATCCCAGGTC GAAGCTAATG GGCTAACTGG TCCTTGCTTC CACTTACCC CCACTGCAGT CCTGACTTCC  
TGAGCAGCAG CCAGGGCCTA ATCGATATTC ACACCAAGCG CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC  
ACCCTGTTTA GTTCTGCTCA CCCTCAGTGT TCTCATCAAT AATCCACTCC CCTCACAGGC GCGTTTGGGA CCCCATGTTT  
TATGCTCTCA CAGGACCTTT TGCTTGATTT TTTCACTGTAC TTAGGTCAGT TTGCAGTTAT TAAGTACTG AGCAATGTCT  
GGCTTCTCCA GTAGACTGTC AGCTCTAGC CATTTGATAC CTAGACCCGC TGTGTGGGAG CACGTGACAA ACGTCCAGTG  
AGTCAGGGAC TCAGCAGTCT CCATTTCTCC GCCCTGCTGG AGAATGCGTG TATTGGCAA TCCCAGCCCC CTGTGCCATC  
TAACCATCTT TTCTTCTCTG TTCAGCCCAG GTGTGGCCTC ACTCACATCC CACTCTGAGT CCAAATGTTT TCTCCCTGGA  
AGATATCAAT GTTCTGTCT GTTCGTGAGG ACTCCGTGCC CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCTCTAG  
TTCACTAGTT AGGGGAGGTG GGCAGACACC CTGGAGAACT CCCTGGAAAG CTCAACTCTC ATGCCCGGA CAACAGTTGA  
AGGAACCATG GTGATGTAA GCCCAAAGAC AAAACCTCTC AGGTGTCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA  
ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA

GATGAACTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAA GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC  
CTTGAAACA AAATATCTCC AACACATGGC TGACATTTGG TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG  
GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG GAGATCTGTT CTGGGGGACA GCATTTGCAA GAAACAAGGC  
TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC TGCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG  
GCCACAGTGC ACTGGACCTA TAGTTTCAA TTCCGCATC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC  
AGGGATGGG CAGGATCCAT CCCCTGGCT ACTGTCTTGC TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC  
TCTAGTGAGT TAGCTCATGA AAGATGATAG ACTCTCCAAG CCAGGGGTAT GCAGGAAATG GGTCTTCTGT AGCTACAGAA  
ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG TCTTACCTC AGAGGACTCT GGAAAGGAGG CTGCAAGTTT  
TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA  
AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAAGTGGG CCAGAGGATC CACTTTCAAG GTGGCAAGTT GGTTCACCCC  
ATGTGGCTGC TTGAGTATCC TCACATGGCG GCTCACATCC TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA  
AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC TGCCACCATT AGTAAGAAAT CCAGCCCACG TCCAGGAGAA  
GAGGAAGCAG ATCTCTCTT TTGAAATGAA GAATATCAAG TAATTCGGGG GGCATATGAA AGCCACCACA CACCACAGGG  
ATCTTTTITAG AGCATACTTC TTATACCATC ACTGTAGTTC CTTAAGACTC AGGGGCAAG CCTCACTTCC TTAGCACCCA  
GTGAAGACCA CGCTTACTCC CTCACTCAAC CTCTTGCTAC TTCCACCTC TCCTGTCCAA CATCTAGTGT CACTTTCCAG  
AACATACCA CAGCTTCCCC AGTTCTGTGC CTCTGCTCAG GCTGTTCCCC CTGCCTGGTC CACTTGTCTT CTTCTGTGC  
CGGTCAAAAT GCTTCTTATC CTTCAAGACC CAGCTCTAGA GTCACCTCCA ACCCTTACC CACCAGCCCC CTCTCCAAGT  
CTGTGTCCA CAACCCCTCT GCTCCCTCCA GGGCACCTC CACCCTCTGG GCCACAGTTG TCAGGAGTCA GGCAGGGCAG  
GGGCCGGGTG GTGTCTTCTT TGTGTTCTTG CACTCAGGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAAA ACATTAAAG  
GATAGAAGCA TTGATTTGTG GGTCCCCCAG TCTGGCTCCA GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTTTTC  
CTGGGAAATC CCAGAGGTGA TGATCAGTAA TCTCTCCCGT GACTCGTAGT TCAGCTCTTC CTCCATGAGC CTGACTATCA  
GTGGACCTTC CAGAAAGAGC CCTTTTCTT TCTCTACCC ACAGCACAGG GCACTGGGAA AATGCCAAT GAGTCTGCC  
TCTGGGTGT GCTTTGGACT TTTCAGTGTG TCTCGCATCC ACTCTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAGAA  
ATGCAAAGCG ATTCAGGATG AGAGCAATAC CTTACTCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTGTC  
CCAAGACCAC ACAGTAGGA GTGGAATCA TGGCTGTCCA AGCCCCATGC CTCTGTGAA GGTAGAGATG AATTACAGCA  
ACAAGTCTAG AAAGGTGCTT GCCCTATGGT CTGTGAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGT TAAAGATGAG  
GTCACCAACA ACGGTGGTGT TGGAGTTTAC CACTGATAAT AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCTTA  
GTGCACTGCG TGGGGCATT TGCACATTGT CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTTAA CTGCCATGTT  
ACAGGTGAGG TCATTGTGGT TCAAGGACGT TAAGTAACTT CCCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG  
TGAACCCAGT AGGACTATCT GGCTGCAAAG TCCCACCCC CTTGCCATC TGTATCTCC AATCACTTCA GTGCTTTGCT  
GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC AGGAAGACAG AACTAGGCA GATGGGCTGG CCATGGTCTC  
CAAGCCAGAC TGAATCTCC AGGTCTGGAA TGATATCATT TTTCTTTT AATAAATTAA CTCACCCACC ACACGGCTTT  
GAGAGGCTCA AAGTTGACCA ACTCCCTGG GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCTCCCA TCACGGAAGC  
TTCAAGGAGG TCAAGGTCC AACACTTGAG ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGGAGC  
CTCGAGATGA AGAATGAGG GCCCCGTTT AGAACCAAGG ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA  
CTGGAGCGCG GGCATGCAGA AACAGCCTG AGCTCCACCT CGGCTTCTCC TTGCTCTGGC TGGTTGCTT TAACCCCTGT  
CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC AGCCTCTTC CACTTCTTT CAGCGCCGAC  
ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA CCTTTGCCA GAGCAAATGC CCCCAGTGG AGTGGCTGGG  
CTGGCTCAAC ACCATCCAGC CCCCCTTCT CTGGGTGCTG TTCGTGCTGG CCACCCTAGA GAACATCTTT GTCCTCAGCG  
TCTTCTGCT GCACAAGAGC AGCTGCACGG TGGCAGAGAT CTACCTGGG AACCTGGCCG CAGCAGACCT GATCTGGCC  
TGCGGGCTGC CTTCTGGGC CATCACCATC TCCAACAACT TCGACTGGCT CTTGGGGAG ACGCTCTGCC GCGTGGTGAA  
TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTT CTGATGCTGG TGAGCATCGA CCGTACCTG GCCCTGGTGA  
AAACCATGTC CATGGGCCGG ATGCGCGCG TCGCTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGTGCTC  
CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG  
CTACCCATCC CTCATCTGGG AAGTGTTCAC CAACATGCTC CTGAATGTCG TGGGCTTCT GCTGCCCTG AGTGTATCA  
CCTTCTGCAC GATGCAGATC ATGCAGGTGC TCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG  
GCCACGGTGC TAGTCTGGT TGTGCTGCTG CTATTCATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC  
GCTGCATCGC CTGGCATCC TCTCCAGCTG CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG  
CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGATC  
CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT  
CTCCGTGGA CGCCAGATTC ACAAATGCA GGAAGTGGCA GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA  
ATTTGTGTA GATTGAGGG ACAGTTGCTT TTCAGCATGG GCCCAGGAAT GCCAAGGAGA CATCTATGCA CGACCTTGGG  
AAATGAGTTG ATGTCTCCGG TAAACACCG GAGACTAATT CTTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA  
TGGGGTGAAC TCACGCACAG CCAAGGACTC CAAATCACA ACAGCATTAC TGTCTTATT TGCTGCCACA CCTGAGCCAG  
CCTGCTCTT CCCAGGAGTG GAGGAGGCT GGGGGCAGG AGAGGAGTGA CTGAGCTTCC CTCCGTGTG TTCTCGTCC  
CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTGCC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG  
TTGCCCTGG TTTCTTAA CTATTCAGCT AGAACTTGA AGGACAATTT CTTGCATTAA TAAAGGTTAA GCCCTGAGGG  
GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CTTACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC  
CAATAAGCAC ATATTGAGCA CTTGCTGTAT ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC



TCCATCTTGA AGGAACTCAA AGACTCAAGT GGGAACTGCT ACCACCAGAA AGCTGTTTGA TGAGACGGTC  
GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA GCCAGGTTCC AGCTACCAA TACTATTGCA CACCACCTGT  
CCTGCCTC GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGA  
CGGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGAGAA  
GGTGGGTGCC GGGCAGGGG TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACAAAGTGTG CCAGCACAGA GGGAGGGAGG  
GAGGGCAGGC AGCGGGGAGA AGTTCCCTG TGGTCGTGGG GAGTT GAGCTCTTCA ATATTTTAGT GAAAGCTATA  
GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT  
CTGTCCCAA CTGGCAAGTC AGGAACTCC AGATTAAGGA GCCCAATGT GGTGAACAG CCAGGTGCAC AGATGAGTCA  
ACCACACAGC CAGGCCAGGG AGGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC  
ACCCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT  
TATGAATCAA GTCACAGGGA AGAGGAGCTG ATGGGCTGGG GGGACGTCTT CTGGCCCTCC TGTCTTCC CCAGATCCAC  
TGGGCCCACT CTATCTGTT CTCTTCTGAA GGAAGGTTT TAAGGCTTCA AAAAAAATG TTTTGAAGT CCTGCCCCTT  
TCCAGTCTCT ACCGTCTCAG CCTGGGAGT GTAAAGTGCT GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC  
AGCCTGAGCC TTGACATGGG AGAAACCTCC GCCATACAT TCCGAAGAAA CGGCCGCTG TCTCAGGGGA GCGCAACAC  
CCGTACCCAG GAAACAGGAC AGCTTCTGCC ACTGTGCCCC TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCCAGGACT  
CCGCTGCCCC ACCTGGCCAC CCTCTGTTTA CACCTCCGC GTAAACGCC ACTGTTTACA TCCAAACTC AGACACAAA  
TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGGC TTCCCAGGCC  
ACTTTGTGGT CAGCCGGGAG GGACGTTTTT GCGTCCCACT GACTCCAAC GGCAGCCGGG CCTACGAAA CATGGAAATC  
TTCCAAGAGC CTCCTGGCC CCCAGGGCTC AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA  
CAGCCAGCCT GGCTCCAGT GGGCAGGAGT GCAGAGTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT  
CACTACCCAG CCCTTCAAAG ATGAGCTGTT CCCGCCCA CTCCAGCTCT GGCTTCTGGG TCCGAGGAG GGGTGGGAC  
GGTGGTGACG GTGGGACAT CAGGCTGCCC CGCAGTACCA GGGAGCGACT GAAGTGCCA TCCGCTTGC TCCGGAGAAG  
GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG CTCACCTCT GTGGGAGGA CAACTGTCC CAGCACAGAG GGAGGGAGGG  
AGGGCAGGCA GCGGGGAGAA GTTCCCTGT GGTCTGGGG AGTTGGGAAA AGTTCCCTC CTCCGGAGG GAGG  
CAGATTACA AACTGCAGGA CTGGGCAGG AGCAGACAGT GAGCAACGC CAGCAGGGCT GCTGTGAATT TGTGAAGGA  
TTGAGGGACA GTTGCTTTC AGCATGGGCC CAGGAATGC AAGGAGACAT CTATGCAGGA CCTTGGGAAA TGAGTTGATG  
TCTCCGGTAA AACACGGAG ACTAATCTCT GGCCTGCCA ATTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAATCA  
CGCACAGCA AGGACTCAA AATCACAACA GCATTACTGT TCTATTGTC TGCCACACCT GAGCCAGCCT GCTCCTCCC  
AGGAGTGAG GAGGCTGGG GGGAGGGAGA GGAGTACTG AGCTTCCCTC CCGTGTGTTT TCCGCTCCCTG CCCAGCAAG  
ACAACCTAGA TCTCCAGGAG AACTGCCATC GAGCTTTGGT GCAATGGCTG AGTGACAAG TGAGTTGTTG CCCTGGGTTT  
CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CTTGATAACA  
ACCTGGAGAC CAGGATTTTA TGGTCCCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCAA TAAGCACATA  
TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC ATCTGAAGG  
AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG  
TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTCCA GCTCAACCAA TAACTATTGC ACAACCACT GTCCCTGCCT  
CAGTCCCCTT TTATGTAACA TGAAGTCGT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG  
TGCTACGTAC ATGTGAGGCA TCATTACGA GACGTAAGT GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA  
ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT AGGTGCTCAT  
TGGCTCCCTT CCACCTGTCA TTCCACCAC CTTGAGGCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT  
GTCTTCAAAG TCTGATTGT GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCAG AGGATCAGAG TGCTGAGACC  
CCCCACCACC AGCCGTACC TGGGAAGGGG GAGAGTGCAG GCCTGTCTAG GGAAGTGTCC TGTCTCAGCA ACCAAGGGAT  
TGTCTCTGTC AATCAATGGT TTATTGGAAG GTGGCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT  
TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG  
AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG  
GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA  
ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT  
GGAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG  
GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC  
TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG AGGGAATGAA  
CCTGGAGGGC TAGAACCTGG AGAATGAGAA AAATTTACAT GGCAAAGAGC CCATAAATCC TGACCAATCC AACTCTGAAT  
TTTAAAGCAA AAGCGTGAAG AAAAAGATTC CCTCCTTACC CCAACCCAC TCTTTTTTCC CACCACCCAC TCTCCTCTGC  
CTCAGTAAGT ATCTGGAGGA AGAAAACAGG TGAAAAGAAGA AGTAAAAACC ATTTAGTATT AGTATTAGAA TGAAGTCAAA  
CTGTGCCACA CATGGTGAAT GAAAAAAGAGG TGTGTTTTGT CACACAGGGC AGTCATTAG CACCAGAGCA  
CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCC CAATGGCCAT GTGGGGATCC ACACCTGGTC TGAGGGGCAA  
CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC TGTCTGTGA AAGACTCAAT  
GAGCTGTTAT GTTGTAACA GGAAGCATTT CACATCCAAA CGAGAAATC ATGTAACAT GTGTCTTTTC TGAGAGCAT  
AATAAATGGA TGAGGTTTTT GCAAAAAAAG AAAAAGAGG AAATGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTTTAA  
ATGAATGCTT TAAGCCGGGT GCAGTGCTC ACATCTGTAA TCCCAGCACT TTGGAGCCGA GCGGGTGGAT TGTGTGAGGT  
CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAAACCTC ACTCTTACC AAAAATACAA AAATTAGCCA GGCATGGTGG

CAGGCACCTG TGATCCCAGC TACTCAGGAG GCTGAGACAG GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC  
AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA GACTCCGTCT CAAAAAAAAA AAAAAAAAAA-AAAAATTAC  
GCTTCAAACA CATGATCTCT CACCACTGTT GAATTTTCTT TCTATGAGCC CAGGAGGGCC TCTCAGAGAG, GAAAGCTCCT  
AGGTCTTCCT TTCCCTCTGC AAATCCCTG CCTTGAAGGT TCAGAAGGAC TGTGCGTGGT CGTTGCATCC TTGCAAGTG  
TCCAAACCCT GATCCCAGCT GTGCTTAGGG GTTCTGCAA ACCTTTTCCA GGTGTTAATT ACCTCCCACT TCATTTCTGT  
TTTACCAACT CAGCTTTTGT TTTTAGTGTG TTTGAATTCC CTGAACTGAC CGTTGTCTGA TCTCCACCTC CCAACTGAAT  
TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT  
ACATTTCATGC ACACACACAC ACCACATAC CCACACATGC ACACACACAC ACACACCCGC ACTCACACAC TTGGACATGC  
ATAGACCACA GCTTTCCACA CCCTTCCTAG ACAGGGGTCA CTGTGTATCC TGGAGAGAGT GTGAAGTCCT GGAATGGAAA  
GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA CAAGTCACCA CCAACCCATC TGCCTTGT TTACCTCTC  
TGTGAGGCAA GCACAGAGCC CATGCCTGCC CCCCTGGATG GGAGTGATGT GAAACTTGAA GGGCGGTGAG AGCAAGGGTC  
GGGAATGGAA GGCCCTTGGG AAAAAAGGCC CTTTCAACTA GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC  
CTTGTAATTG GTAAGCCAAG CCCGAAGGGA CTGGAAATAC TCAGATGTGT CTGTCTCCCT TATTAGGTTT AAAGTCCCTC  
AAGACCCTGT CTCCATCACA GTGCTCCAGT CCAGACCCCT CCTCTGAGCT CCAGACCCCTG CTGGACCCAA CCAGCCCTAT  
GGGGTCGCAT CCCCACCTGC CTGGAATTCT CCAAAGAACC TCCCCTTAA CAGTTCACAG CTTTAAAGT TCCAGTCTAA  
ACACATGACC TTTCTCTCT AAATCAGCCC CCCATCTCTG CCTTTCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC  
TGTCTCACC CCATCCATGT CCAATCAAGC ACTAGGCATG TCAGGTTTAC CCTCTAAACT CCTCTGGAAT CCAGTCTCTC  
AGTCTCCATC ATCCAGGTG GAAGCTAATG GGCTAACTGG TCCTTGCTTC CACTCTACCC CCACTGCAGT CTGACTTCC  
TGAGCAGCAG CCAGGGCCTA ATCGATATTC ACACCAAGCG CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC  
ACCTGTITA GTTCTGCTCA CCCTCAGTGT TCTCATCAAT AATCCACTCC CCTCACAGGC GCGTTTGGGA CCCCATGTTT  
TATGCTCTCA CAGGACCTTT TGCTTGATTT TCACTGTAC TTAGGTGAGT TTGCAGTTAT TAAGTGACTG AGCAATGTCT  
GGCTTCTCCA GTAGACTGTC AGCTCCTAGC CATTGTATAC CTAGCACCAG TGTGTGGGAG CACGTGACAA ACGTCCAGTG  
AGTCAGGGAC TCAGCAGTCT CCATTTCTCC GCCCTGCTGG AGAATGCGTG TATTGGCAA TCCCAGCCC CTGTGCCATC  
TAACCATCTT TTCTTCTCTG TTCAGCCCAG GTGTGGCTC ACTCACATCC CACTCTGAGT CCAAATGTTT TCTCCTGGA  
AGATATCAAT GTTCTGTCT GTTCGTGAGG ACTCCGTGCC CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCCTCAG  
TTCAGTAGT AGGGGAGGTG GGCAGACACC CTGGAGAAT CCCTGGAAAG CTCAACTCTC ATGCCCGGA CAACAGTTGA  
AGGAACCATG GTGATGTTAA GCCCAAAGAC AAAACCTCTC AGGTGTCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA  
ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCA  
GATGAACTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAG GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC  
CTTGAAACA AAATATCTCC AACACATGGC TGACATTGG TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG  
GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG GAGATCTGTT CTTGGGGACA GCATTGCAA GAAACAAGGC  
TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG  
GCCACAGTGC ACTGGACCTA TAGTTTCCAA TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC  
AGGGATGGG CAGGATCCAT CCCCTTGGCT ACTGTCTTGC TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC  
TCTAGTGAGT TAGCTCATGA AAGATGATAG ACTCTCAAAG CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGTACAGAA  
ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG TCTTACCTC AGAGGACTCT GGAAAGGAGG CTGCAAGTTT  
TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA  
AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAAGTGGG CCAGAGGATC CACTTTCAAG GTGGCAAGTT GGTCCCCC  
ATGTGGCTGC TTGAGTATCC TCACATGGCG GCTCATATCC TTCCAAGTAA GCAATGCAA AGGCCAAGAA AGATGCTGCA  
AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC TGCCACCATT AGTAAGAAGT CCAGCCCACG TCCAGGAGAA  
GAGGAAGCAG ATTCCTCCTT TTGAAATGAA GAATATCAAG TAATTCGGGG GGCATATGAA AGCCACCACA CACCAGGGG  
ATCTTTITAG AGCATACTTC TTATACCATC ACTGTAGTTC CTTAAGACTC AGGGGCAAAG CCTCACTTCC TTAGACCCA  
GTGAAGACCA CGCTTACTCC CTCACCTAAC CTCTGTCTAC TTCCACCTC TCCTGTCCAA CATCTAGTGT CACTTTCCAG  
AACATACCAA CAGCTTCCCC AGTTCTGTGC CTCTGCTCAG GCTGTCCCC CTGCCTGGTC CACTTGTCTT CCTTCTGTG  
CGGTCAAAT GCTTCTTATC CTCAAGACC CAGCTCTAGA GTACCTCCA ACCCTTACC CACCAGCCCC CTCTCAAGT  
CTGTGTCCCA CAACCCCCCT GCTCCCTCCA GGGCACCTC CACCCTCTGG GCCACAGTTG TCAGGAGTCA GGCAGGGCAG  
GGGCCGGGTG GTGTCTTCTT TGTGTTCTTG CACTCAGGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAA ACATTTAAAG  
GATAGAAGCA TTGATTTGTG GGTCCCCCAG TCTGGCTCCA GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTTTTC  
CTGGGAAATC CCAGAGGTGA TGATCAGTAA TCTCTCCCT GACTCGTAGT TCAGCTCTT CTCCATGAGC CTGACTATCA  
GTGGACCTT CAGAAAGAGC CCCTTTTCTT TCTCTCACC ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCTGCTC  
TCTGGGTGT GCTTTGGACT TTTAGTGTG TCTCGCATCC ACTCTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAGAA  
ATGCAAAGCG ATTCAGGATG AGAGCAATAC CTAATCCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC  
CCAAGACCAC ACAGCTAGGA GTGGAACTCA TGGCTGTCCA AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA  
ACAAGTCTAG AAAGGTGCCT GCCCTATGGT CTGTGAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGGT TAAAGATGAG  
GTCACCAACA ACGGTGGTGT TGGAGTTTAC CACTGATAAT AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCCTA  
GTGCACTGCG TGGGGCATTT TGCACATTGT CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTAA CTGCCATGTT  
ACAGGTGAGG TCATTGTGGT TCAAGGACGT TAAGTAACTT CCCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG  
TGAACCCAGT AGGACTATCT GGCTGCAAAG TCCCCACCCC CCTCGCCATC TGTATCTCT AATCACTTCA GTGCTTTGCT  
GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC AGGAAGACAG AAAGTAGGCA GATGGGCTGG CCATGGTCTC



CAAGCCAGAC TGAATCTCC AGGTCTGGAA TGATATCATT TTTCTCTTTT AATAAATTAA CTCACCCACC ACACGGCTTT  
GAGAGGCTCA AAGTTGACCA ACTCCCTTGG GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCCTCCCA TCACGGAAGC  
TTCAAGGAGG TCAAGGGTCC AACACTTGAG ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGAGGC  
CTCGAGATGA AGAATATGAG GCCCCGTTT AGAACCAAGG ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA  
CTGGAGCGCG GGCATGCAGA AAACAGCCTG AGCTCCACCT CGGCTTCTCC TTGTCCTGGC TGGTTGTCTT TAACCCCTGT  
CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC AGCCTCTTTC CACTTCTTTT CAGCGCCGAC  
ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA CCTTTGCCCA GAGCAAATGC CCCAAGTGG AGTGCTGGG  
CTGGCTCAAC ACCATCCAGC CCCCCTTCTT CTGGGTGCTG TTCGTGCTGG CCACCCTAGA GAACATCTTT GTCTCAGCG  
TCTTCTGCCT GCACAAGAGC AGCTGCACGG TGGCAGAGAT CTACCTGGGG AACCTGGCCG CAGCAGACCT GATCCTGGCC  
TGCGGGCTGC CTTTCTGGGC CATCACCATC TCCAACAACT TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA  
TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTTCT CTGATGCTGG TGAGCATCGA CCGCTACCTG GCCCTGGTGA  
AAACCATGTC CATGGGCGCG ATGCGCGCGG TGCGCTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC  
CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG  
CTACCCATCC CTCATCTGGG AAGTGTTTAC CAACATGCTC CTGAATGTCG TGGGCTTCTT GCTGCCCTG AGTGTCATCA  
CCTTCTGCAC GATGCAGATC ATGCAGGTGC TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG  
GCCACGGTGC TAGTCTGGT TGTGCTGCTG CTATTCATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC  
GCTGCATCGC CTCGGCATCC TCTCCAGCTG CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG  
CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC  
CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT  
CTCCGTGGAA CGCCAGATTC ACAAACCTGCA GGAAGTGGCA GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA  
ATTTGTGTAA GGATTGAGGG ACAGTTGCTT TTCAGCATGG GCCCAGGAAT GCCAAGGAGA CATCTATGCA CGACCTGGG  
AAATGAGTTG ATGTCTCCGG TAAACACCGG GAGACTAATT CCTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA  
TGGGGTGAAC TCACGCACAG CCAAGGACTC CAAATCACA ACAGCATTAC TGTCTTATT TGCTGCCACA CCTGAGCCAG  
CCTGCTCCTT CCCAGGAGTG GAGGAGGCTT GGGGGGAGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC  
CTGCCCCAGC AAGACAACTT AGATCTCCAG GAGAACTGCC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG  
TTGCCCTGGG TTTCTTAAT CTATTCAGCT AGAACTTGA AGGACAATTT CTGCAATTA TAAAGGTAA GCCCTGAGGG  
GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC  
CAATAAGCAC ATATTGAGCA CTGCTGTAT ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC  
TCCATCTTGA AGGAACTCAA AGACTCAAGT GGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTCTGA TGAGACGGTC  
GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA GCCAGGTTCC AGCTACCAA TACTATTGCA CACCACCTGT  
CCTGCCCTC CTGCAGAAA CAGCCTGAGC TCCACCTCGG CTTCTCCTTG CCCTGGCTGG TTGCTCTTAA CCCCTGTCTC  
CTTCTGGACC AGTTTTTGTG CTTCCCTTGT GACCCTGAGG GGTAACAGCC TCTTTTCCAC TTTCTTTCAG CGCCGACATG  
CTCAATGTCA CCTTGCAAGG GCCCACTCTT AACGGGACCT TTGCCAGAG CAAATGCCCC CAAGTGGAGT GGCTGGGCTG  
GCTCAACACC ATCCAGCCCC CTTCTCTCTG GGTGCTGTTT GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT  
TCTGCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGAG CAGACCTGAT CCTGGCCTGC  
GGGCTGCCCT TCTGGGCCAT CACCATCTCC ACAAACCTCG ACTGGCTCTT TGGGGAGACG CTCTGCCGCG TGGTGAATGC  
CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTCTCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAATA  
CCATGTCCAT GGGCCGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGTGTAC GCTGCTCTG  
AGCTCACCA TGCTGGTGT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA  
CCCATCCCTC ATCTGGGAAG TGTTACCAA CATGCTCTG AATGTCGTGG GCTTCTGCTT GCCCTGAGT GTCATCACCT  
TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC  
ACGGTGCTAG TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT  
GCATCGCCTC GGCATCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTCC TTCATGGCCT  
ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG  
GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC AACTGCGGA CCTCCATCTC  
CGTGGAAACGC CAGATTCACA AACTGCAGGA CTGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT  
TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA  
TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GNCCTGCCCA ATTTTGAGG GAGCATGGCT GTGAGGATGG  
GGTGAATCA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTGTC TGCCACACCT GAGCCAGCCT  
GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGCAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTT TCCGTCCCTG  
CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGACAAG TGAGTTGTTG  
CCCTGGGTTT CTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC  
CCTGATAACA ACCTGGAGAC CAGGATTTTA TGCTCCCTT CACTGATGGA CAAGGGAGGT CTGTGCCAAA GAAGAATCCA  
ATAAGCACAT ATTGAGCACT TGCTGTATAT GCAGTATTGA GCACTGTAGG CAAGAGGGAA GAAAGAGAAG GAGCCATCTC  
CATCTTGAAG GAACTCAAAG ACTCAAGTGG GAACGACTGG CACTGCCACC ACCAGAAAGC TGTTGACGA GACGGTCGAG  
CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACT  
GTCCCTGCCT CAGTTCCCTC TTCTGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GACTTAGAA  
AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACCT GGATATGTTT ACTATAAGGA AAAGACACTG  
AGGTCTAGA TGATCCTATC ACAACCTGAG AGTAGTTTTT ACTCCATTTA CAGGTGAGGT CATTGTGGTT CAAGGACGTT

AAGTAAGTTC CCCAGCTCAC ACGGCTTATA AGTAAGGCAG CCAGGATGTG AACCCAGTAG GACTATCTGG CTGCAAAGTC  
CCCACCTCC CTCGCCATCT GTATCCTCCA ATCATCTTCA GTGCTTTGCT GATAGAAGGT ACGGAAATAG GATGCCACAG  
ACTGTCCAGG AAGACAGAAA CTAGGCAGAT GGGCTGGCCA TGGTCTCAA GCCAGACTGG AATCTCCAGG TCTGGAATGA  
TATCATTTTT CTCTTTAAT AAATTAATC ACCCACCACA CGGCTTTGAG AGGCTCAAAG GTGACCAACT CCCTGGGAG  
GGCCCCGTT GATAAGGAAG GAATGTGAAT CCTCCATCA CGGAAGCTTC AAGGAGGTCA AGGGTCCAAC ACTTGAGATT  
GTTAGTGCTG TTGGTGGATA CTGCAGAATA TCCAGTGGAG CCTCAGATGA AGAACATGAG GCCCCGTTTA GATCCAAGGA  
TCAGAGGGGG CTCTGTAAGA CCCAGGGGAG TCAGGTGCAC TGGAGCGCGG GCTGCAGAAA ACAGCCTGAG CTCCACCTCG  
GCTTCTCCTT GCCCTGGCTG GTTGTCTTA ACCCTGTCT CTTCTGGAC CAGTTTTGT CTTCCCTTG TGACCTGAGG  
GGTAACAGCC TCTTTCCAC TTTCTTCAG CGCCGACATG CTCAATGTCA CCTTGCAAGG GCCCACTCTT AACGGGACCT  
TTGCCAGAG CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GTC AACACC ATCCAGCCCC CTTCTCTG GGTGCTGTTT  
GTGCTGGCCA CCTAGAGAA CATCTTGTG CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA  
CCTGGGGAAC CTGGCCGAG CAGACCTGAT CTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC ACAAATTCG  
ACTGGCTCTT TGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTCTCTG  
ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA  
GCTCTACAGC TTGGTGATCT GGGGGTGAC GCTGCTCTG AGCTACCCA TGCTGGTGT CCGGACCATG AAGGAGTACA  
GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTACCAA CATGCTCTG  
AATGTCGTGG GCTTCTGCT GCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA  
GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGGTGT GCTGCTGCTA TTCATCATCT  
GCTGGCTGCC CTTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCTC GGCATCTCT CCAGCTGCCA GGACGAGCGC  
ATCATCGATG TAATCACACA GATCGCTCC TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT  
GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC  
AGATGGAGAA CTCCATGGG ACCTGCGGA CCTCCATCTC CGTGAACGC CAGATTACA AACTGCAGGA CTGGGCAGGG  
AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGAAGGA TTGAGGGACA GTTGCTTTT AGCATGGGCC  
CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTGTGA TGTCTCCGT AAAACACCGG AGACTAATTC  
CTGCCCTGCC CAATTTTGA GGGAGCATGG CTGTGAGGAT GGGGTGAAT CACGCACAGC CAAGGACTCC AAAATCACAA  
CAGCATTACT GTTCTTATTT GCTGCCACAC CTGAGCCAGC CTGCTCTTC CCAGGAGTGG AGGAGGCTG GGGGAGGGAG  
AGGAGTGACT GAGCTTCCCT CCCGTGTGTT CTCCGTCCCT GCCCCAGCAA GACAACTTAG ATCTCCAGGA GAACTGCCAT  
CCACGTTTGG TGCAATGGCT GAGTGACAA GTGAGTTGTT GCCCTGGGT TCTTAATCT ATCAGTAGA ACTTTGAAGG  
ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTTGATAAC AACCTGGAGA CCAGGATTTT ATGGCTCCCC  
TCACTGATGG ACAAGGAGGT CTGTGCCAAA GAAGAATCAA TAAGCACATA TGAGCACTTC TGTATATCAG TATTGAGCAC  
TGTAGGCA ATGTTCTCTC CTGGAAGAT ATCAATGTTT CTGTCTGTT GTGAGGACTC CGTGCCACC ACCGCTCTT  
TCAGCGCCGA CATGCTCAAT GTCACCTTGC AAGGGCCAC TCTTAACGGG ACCTTTGCC AGAGCAAATG CCCCCAAGTG  
GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT  
TGTCTCAGC GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC  
TGATCTGGC CTGCGGGCTG CCCTTCTGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGA GACGCTCTGC  
CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CTTGATGCTG GTGAGCATCG ACCGCTACCT  
GGCCTGGTG AAAACCATGT CCATGGGCGG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT  
GTACGCTGCT CTTGAGCTCA CCCATGCTGG TGTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT  
TGTGTCATCA GTCACCATC CCTCATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCT  
GAGTGTATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA  
CGGAGAGGAG GGCCACGGTG CTAGTCTGG TTGTGCTGCT GCTATTATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC  
TTCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC  
CTCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT  
GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG  
CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAACTGC AGGACTGGG AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG  
GGCTGCTGTG AATTTGTGTA AGGATTGAGG GACAGTTGCT T ATGTTCTCTC CTGGAAGAT ATCAATGTTT CTGTCTGTTT  
GTGAGGACTC CGTGCCACC ACCGCTCTT TCAGCGCCGA CATGCTCAAT GTCACCTTGC AAGGGCCAC TCTTAACGGG  
ACCTTTGCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTCC TCTGGGTGCT  
GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCTCAGC GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA  
TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCTGGC CTGCGGGCTG CCCTTCTGG CCATCACCAT CTCCAACAAC  
TTCGACTGGC TCTTTGGGA GACGCTCTGC CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT  
CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCTGGTG AAAACCATGT CCATGGGCGG GATGCGCGGC GTGCGCTGGG  
CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CTTGAGCTCA CCCATGCTGG TGTCCGGAC CATGAAGGAG  
TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GTCACCATC CCTCATCTGG GAAGTGTTCA CCAACATGCT  
CCTGAATGTC GTGGGCTTCC TGCTGCCCT GAGTGTATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA  
ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCTGG TTGTGCTGCT GCTATTATC  
ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA  
GCGCATCATC GATGTAATCA CACAGATCGC CTCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA  
TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC

ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAACTGC AGGACTGGGC  
AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTGTGTA AGGATTGAGG GACAGTTGCT T  
GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGGGAC  
ATCAGGCTGC CCCGAGTAC CAGGGAGCGA CTGAAGTGCC CATGCCGCTT GCTCCGAGA AGGTGGGTGC CGGCAGGGG  
CTGCTCCAGC CGCTCACCT CTGCTGGGAG GACAACTGT CCCAGCACAG AGGGAGGGAG GGAGGGCAGG CAGCGGGAG  
AAGTTTCCCT GTGGTCGTGG GGAGTT GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG  
GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC  
ATGCCGCTTG CTCCGAGAA GGTGGGTGCC GGGCAGGGGC TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACAAAGTGC  
CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG TGGTCGTGGG GAGTT GAGCTCTTCA  
ATATTTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT CAGAGGGCTT GTGGACTCTG  
GGCAGCCTGT CCATAGACCT CTGTCCCAA CTGGCAAGTC AGGAACTCC AGATTAAGGA GCCCAATGT GGTGAACAG  
CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA  
GCCAGGGCTA GCGCCAGGCC ACCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA  
TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG ATGGGCTGGG GGGACGTCTT CTGGCCCTCC  
TGTCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT CTCTTCTGAA GGAAGGTTT TAAGGCTTCA AAAAAAATG  
TTTTGAAAGT CCTGCCCTT TCCAGCTCCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT GCAGATAGTT AGTAAGTCTT  
TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAACTCTCC GCCATACATC TCCGAAGAAA CGGCCGCTG  
TCTCAGGGGA GCGCAAAAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC ACTGTGCCCC TTGGGAGCCG TACGTGGCAT  
GACAAAGAAA TCCCAGGACT CCGCTGCC ACCTGGCCAC CCTCTGTTA CACCTTCCGC GTAAACGCCC ACTGTTTACA  
TCCAAACTC AGACAAAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG TTACGCGAGG CAAATTTATT  
CACATGGGGC TTCCAGGCC ACTTGTGGT CAGCCGGGAG GGACGTTTT GCGTCCAC GACTCCAACG GGCAGCCGGG  
CCTACGCAA CATGGAATC TTCCAAGAGC CTCCTGGCC CCCAGGGCTC AGAGGTGGC AGAGCGGAGA GCGAAGGTGG  
CCGACGCTT CCCGGCCCA CAGCCAGCCT GGCTCCAGCT GGCAGGAGT GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT  
GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTCAAAG ATGAGCTGTT CCCGCCCA CTCCAGCTCT GCCTTCTGGG  
CTCCGAGGAG GGGTGGGAC GGTGGTGACG GTGGGACAT CAGGCTGCC CGCAGTACCA GGGAGCGACT GAAGTGCCA  
TGCCGCTTG TCCGAGAAG GTGGGTGCC GGCAGGGGCT GCTCCAGCCG CCTCACCTCT GCTGGGAGGA CAACTGTCC  
CAGCACAGAG GGAGGGAGG AGGGCAGGCA GCGGGAGAA GTTCCCTGT GGTCTGGGG AGTTGGGAAA AGTCCCTTC  
CTTCCGAGG GAGG CAGATTCACA AACTGCAGGA CTGGGCAGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT  
GCTGTGAATT TGTGAAGGA TTGAGGACA GTTGCTTTC AGCATGGGC CAGGAATGCC AAGGAGACAT CTATGCAGCA  
CCTTGGGAAA TGAGTTGATG TCTCCGTAA AACACCGGAG ACTAATCTT GCGTCCCA ATTTGCAAG GAGCATGGCT  
GTGAGGATGG GGTGAATCA CGCACAGCCA AGGACTCAA AATCACAACA GCATTACTGT TCTATTGTC TGCCACACT  
GAGCCAGCCT GCTCTTCCC AGGAGTGGAG GAGGCTGGG GGGAGGGAGA GGAGTGAAGT AGCTTCCCTC CCGTGTGTT  
TCCGTCCCTG CCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGACAAG  
TGAGTTGTTG CCTGGGTTT CTTAATCTA TTCAGTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC  
CTGAGGGGTC CTGATAACA ACCTGGAGAC CAGGATTTA TGGTCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG  
AAGAATCAA TAAGCACATA TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG  
AGCCATCTCC ATCTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA  
GACGGTCGAG CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGAGAC CAAGTTTCCA GCTCAACCAA TAACTATTGC  
ACAACCACCT GTCCTGCCT CAGTCCCTT TTATGTAACA TGAAGTCGT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA  
GTAATTAGAA AAGCAAAGG TGCTACGTAC ATGTGAGGCA TCATTACCA GACGTAAGT GGATATGTTT ACTATAAGGA  
AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGACGAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT  
GGCACACAGT AGGTGCTCAT TGGTCCCTT CCACCTGTCA TTCCACCAC CCTGAGGCC CAACCGCCAC ACACACAGGA  
GCATTTGGAG AGAAGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCAG  
AGGATCACAG TGCTGAGACC CCCACCACC AGCCGGTACC TGGGAAGGGG GAGAGTGCAG GCCTGCTCAG GGAAGTTC  
TGTCTCAGCA ACCAAGGGAT TGTTCTGTG AATCAATGGT TTATTGGAAG GTGGCCAGT ATGAGCCCTA GAAGAGTGTG  
AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TCACTTGAT AAATGAATAT TTATTAGCTG  
GTTGGAGAGC TAGAACCCTG AGAGCTAGAA CCTGGAGAAC TAGAACCCTG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA  
GAAGGGCTAG AACCTGGAGG GGCTAGAAC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG  
CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCCTG GAGGGCTAGA  
ACCTAGAAGG GCTAGAACC GGAGGGCTGG AATCTGGAGA GCTAGAACC GGAGGGCTAG AACCTGGAGG GCTAGAACC  
AGAAGGGCTA GAACCTGGAG GGCTAGAAC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA  
GGGCTAGAAC CTGAAGGGC TAGAACCCTG AGAGCTAGAA CATGGAGAGC TAGAACCCTG CAGGCTAGAA CCTGGCAAGC  
TAGAACCCTG AGGAATGAA CCTGGAGGGC TAGAACCCTG AGAATGAGAA AAATTTACAT GGCAAGAGC CCATAAATCC  
TGACCAATCC AACTCTGAAT TTTAAAGCAA AAGCGTGA AAAAAGATT CCTCCTTACC CCCAACCCAC TCTTTTTCC  
CACCACCAC TCTCTCTGC CTCAGTAAGT ATCTGGAGGA AGAAAACAGG TGAAAAGA AGTAAAAACC ATTTAGTATT  
AGTATTAGAA TGAAGTCAA CTGTGCCACA CATGGTGAAT GAAAAAAGAGG TGTGTTTTGT CACACAGGGC  
AGTCATTAG CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCC CAATGGCCAT GTGGGGATCC  
ACACCTGGTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAATC  
TGCTCTGTA AAGACTCAAT GAGCTGTTAT GTGTAAACA GGAAGCATTT CACATCCAAA CGAGAAAATC ATGTAAACAT

GTGTCCTTTTC TG TAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAAAAAAA AAATGATAGA CCGTCAATAA  
TTTGTTAAAT GCTTTTTAAA ATGAATGCTT TAAGCGGGT GCAGTGCCTC ACATCTGTAA TCCCAGCACT TTGGAGCCGA  
GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAAACCTC ACTCTCTACC AAAAAATACA  
AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCAGC TACTCAGGAG GCTGAGACAG GAGAATCGCT TGAACCCGGG  
AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA GACTCCGTCT CAAAAA  
AAAAAATTAC GCTTCAAACA CATGATCTCT CACCCTGTT GAATTTCTT TCTATGAGCC CAGGAGGGCC  
TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACCTCCCTG CCTGAAGGT TCAGAAGGAC TGTGCGTGCT  
CGTTGCATCC TTGCAAGTG TCCAAACCCT GATCCACGCT GTGCTTAGGG GTTCCTGCAA ACCTTTTCCA GGTGTTAATT  
ACCTCCCACT TCAITTCCTG TTTACCAACT CAGCTTTTTG TTTTAGTGTG TTTGAATTCC CTGAAGTAC CGTTGTCTGA  
TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT GCAGAGTGGC TGAAGCTGG  
GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACAC ACCACATAC CCACACATGC ACACACACAC ACACACCCGC  
ACTCACACAC TTGGACATGC ATAGACCACA GCTTTCCACA CCCTTCCTAG ACAGGGGTCA CTGGTATCC TGGAGAGAGT  
GTGAAGTCTT GGAATGGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA CAAGTCACCA CCAACCCATC  
TGCGCCTTGT TTACCTCTC TGTGAGGCAA GCACAGAGCC CATGCCTGCC CCCCTGGATG GGAGTGATGT GAAACTTGAA  
GGGCGGTGAG AGCAAGGGTC GGAATGGAA GGCCCTTGGG AAAAAAGGCC CTTTCAACTA GGGGCACAGA GGAGGCCCTG  
GGCTGAGAAC TTGACAGCAC CTGTGAATTG GTAAGCCAAG CCCGAAGGGA CTGGAAATAC TCAGATGTGT CTGTCTCCCT  
TATTAGGTTT AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT CCAGACCCCT CCTCTGAGCT CCAGACCCTG  
CTGGACCCAA CCAGCCCTAT GGGGTGCGAT CCCCACCTGC CTGGAATTCT CCAAAGAACC TCCCCTTAA CAGTTCCAGC  
CTTTAACAGT TCCAGTCTAA ACACATGACC TTTCTCTCT AAATCAGCCC CCCATCTCTG CCTTTCAGG AGATGGAAGC  
CATGACACCT GCCTCGCCCC TGCTCTACC CCATCCATGT CCAATCAAGC ACTAGGCATG TCAGGTTTAC CCTCTAAACT  
CCTCTGGAAT CCAGTCTCTC AGTCTCCATC ATCCAGGTC GAAGCTAATG GGCTAACTGG TCCTTGCTTC CACTCTACCC  
CCACTGCAGT CTGACTTCC TGAGCAGCAG CCAGGGCCTA ATCGATATTC ACACCAAGCG CCAACCTGAC TGAGATATCC  
TCTGCACCA TCATCCCTCC ACCCTGTTA GTTCTGCTCA CCCTCAGTGT TCTCATCAAT AATCCACTCC CCTCACAGGC  
GCGTTTGGGA CCCCATGTTT TATGCTCTCA CAGGACCTT TGCTTGATTT TCACTGTAC TTAGGTCAGT TTGCAATTAT  
TAAGTGACTG AGCAATGTCT GGCTTCTCCA GTAGACTGTC AGCTCCTAGC CATTGTATAC CTAGCACCGC TGTGTGGGAG  
CACGTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGTCT CCATTTCTCC GCCCTGCTGG AGAATGCGTG TATTTGGCAA  
TCCCCAGCCC CTGTGCCATC TAACCATCTT TTCTTCTCTG TTCAGCCCAG GTGTGGCCTC ACTCACATCC CACTCTGAGT  
CCAAATGTTT TCTCCCTGGA AGATATCAAT GTTCTGTCT GTTCGTGAGG ACTCCGTGCC CACCACGGCC TCTTCAGGT  
GAGTCAAAGG GATTCTCAG TTTACTAGT AGGGGAGGTG GGCAGACACC CTGGAGAACT CCCTGGAAAG CTCAACTCTC  
ATGCCCCGGA CAACAGTTGA AGGAACCATG GTGATGTAA GCCCAAAGAC AAAACCTCTC AGGTGTCAA GTCCCTGTG  
GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA AGGGCACATT CTGGTTGT  
ATATGTTTCT ATCTATCCA GATGAACCTG GAAGTGAAGG GAAGAGAGTT AAACATTAAT GTAAATACCC AGTGGATCAG  
ACAGCAATGT GCCAGATTGC CTTGGAAACA AAATATCTCC AACACATGGC TGACATTTGG TGGGAGATCA GAACACCCTA  
AAGAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC AGAGGATAGG GAGATCTGTT  
CTTGGGGACA GCATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG CTGCAGGTGC TGCCTATGAT  
GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCAA TTCCGCACTC AGCAGGCATC  
TTTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGGC CAGGATCCAT CCCCTGGCT ACTGTCTTGC TGAGAAATTT  
ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGTCTATGA AAGATGATAG ACTCTCCAAG CCAGGGGTAT  
GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC CCAGGGGAAG TCTTACCTTC  
AGAGGACTCT GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA GACAGCTTAT CTCTGTTCCA  
AGATGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC GTAACGGGG CCAGAGGATC  
CACTTTCAAG GTGGCAAGTT GGTTCCTCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG GTCACATCC TTCCAAGTAA  
GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC ACACCATCCC TGCCACCATT  
AGTAAGAAGT CCAGCCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT TTGAAATGAA GAATATCAAG TAATTCGGGG  
GGCATATGAA AGCCACCACA CACCACAGGG ATCTTTTATG AGCATACTTC TTATACCATC ACTGTAGTTC CTTAAGACTC  
AGGGGCAAAG CTTCACTTCC TTAGCACCCA GTGAAGACCA CGTTACTCC CTCCTCAAC CTCTGTCTAC TTCCACCTC  
TCTGTCCAA CATCTAGTGT CACTTCCAG AACATACCA CAGCTTCCC AGTCTGTGC CTCTGCTCAG GCTGTTCCCC  
CTGCCTGGTC CACTGTCTCT CTTCTGTGC CGGTCAAAAT GCTTCTTATC CTTCAAGACC CAGCTCTAGA GTCACCTCCA  
ACCCCTTACC CACCAGCCCC CTCTCCAAGT CTGTGTCCCA CAACCCCTCCT GCTCCCTCCA GGGCACCTC CACCCTCTGG  
GCCACAGTTG TCAGGAGTCA GGCAGGGCAG GGGCCGGGTG GTGCTTCTT TGTGTTCTTG CACTCAGGGC AGAGCTCAGC  
ACAGAGCAGA CGCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCCAG TCTGGCTCCA GGATGCCAGC  
CAGCTGCTCC TAGAAGCAAA CGGACTTTTC CTGGGAAATC CCAGAGGTGA TGATCAGTAA TCTCTCCCGT GACTCGTAGT  
TCAGCTCTTC CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC CCCTTTTCT TCTCTCACC ACAGCACAGG  
GCACTGGGAA AATGCCCAAT GAGTCTGCC TCTGGTTGT GCTTTGGACT TTTCAGTGTG TCTCGCATCC ACTCTTCAAC  
TTGAATGTTG CAACAGCCAT GAAAAAGAA ATGCAAGCG ATTACAGGATG AGAGCAATAC CTTACTCAA AGAAGGCAAC  
ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGTAGGA GTGGAATCA TGGCTGTCCA AGCCCCATGC  
CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCCTATGGT CTGTGAGTCT TGCCTAAGAA  
TGAAAGAGGA GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC CACTGATAAT AAGGGTGCAA  
AATGTAAATT ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGCATTT TGCACATTGT CTCTGATCCC TATGACAACC

CTGAGAGGTA GTGGTTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT TAAGTAACTT CCCCAGCGTG  
ACACGGCTTA TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAAG TCCCCACCCC CCTCGCCATC  
TGTATCCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA CAGACTGTCC AGGAAGACAG  
AACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGAATCTCC AGGTCTGGAA TGATATCATT TTTCTTTTT  
AATAAATTA CTCACCCACC ACACGGCTTT GAGAGGTCTA AAGTTGACCA ACTCCCTTGG GAGGGCCCCG GTTGATAAGG  
AAGGAACGTG AATCCTCCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC AACACTTGAG ATTGTTAGTG CTGTTGGTGG  
ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAACATGAG GCCCCCGTTT AGAACCAAGG ATCAGAGGGG  
GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG AGCTCCACCT CGGCTTCTCC  
TTGTCCTGGC TGGTTGTCTT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT TGTGACCGCT GAGGGGTAAC  
AGCCTCTTTC CACTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT CTTAACGGGA CCTTGCCCA  
GAGCAAATGC CCCCAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCCTTCT CTGGGTGCTG TTCGTGCTGG  
CCACCCTAGA GAACATCTTT GTCCTCAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGG TGGCAGAGAT CTACCTGGGG  
AACCTGGCCG CAGCAGACCT GATCCTGGCC TGCGGGCTGC CTTTCTGGGC CATCACCATC TCCAACAACT TCGACTGGCT  
CTTGGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG CATCTGTTTC CTGATGCTGG  
TGAGCATCGA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG ATGCGCGGGC TGCGCTGGGC CAAGCTCTAC  
AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC ATGAAGGAGT ACAGCGATGA  
GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCATCC CTCATCTGGG AAGTGTTCAC CAACATGCTC CTGAATGTGC  
TGGGCTTCTT GCTGCCCTG AGTGTATCA CTTTCTGCAC GATGCAGATC ATGCAGGTGC TCGGAACAA CGAGATGCAG  
AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCTGGT TGTGCTGCTG CTATTCATCA TCTGCTGGCT  
GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG CCAGGACGAG CGCATCATCG  
ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG TGTACGTGAT CGTGGGCAAG  
CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG TCAGAACCCA TTCAGATGGA  
GAACTCCATG GGCACACTGC GGACCTCCAT CTCCTGGAA CGCCAGATTC ACAAACCTGCA GGAAGTGGCA GGGAGCAGAC  
AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGGG ACAGTTGCTT TCAGCATGG GCCCAGGAAT  
GCCAAGGAGA CATCTATGCA CGACCTTGGG AAATGAGTTG ATGTCTCCGG TAAAACACCG GAGACTAATT CCTGCCCTGC  
CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGTGTAAC TCACGCACAG CCAAGGACTC CAAAATCACA ACAGCATTAC  
TGTTCTTATT TGCTGCCACA CTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCCT GGGGGCAGGG AGAGGAGTGA  
CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACCT AGATCTCCAG GAGAACTGCC ATCCAGCTTT  
GGTGCAATGG CTGAGTGAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT AGAACTTTGA AGGACAATTT  
CTTGCAATTA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT TTATGGCTCC CCTCACTGAT  
GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTGCTGTAT ATGCAGTATT GAGCACTGTA  
GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTGA AGGAACTCAA AGACTCAAGT GGGAACTGCT GGGCACTGCC  
ACCACCAGAA AGCTGTTTGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC AGAAGGGGGA GCCAGGTTCC  
AGCTACCAA TACTATTGCA CACCACCTGT CTGCCTC CTGCAGAAA CAGCCTGAGC TCCACCTCGG CTCTCCTTG  
CCCTGGCTGG TTGCTCTTAA CCCCTGTCTC CTCTGGACC AGTTTTTGTG CTTCCTTGT GACCCTGAGG GGTAACAGCC  
TCTTTTCCAC TTTCTTTCAG CGCCGACATG CTCAATGTCA CTTGCAAGG GCCACTCTT AACGGGACCT TTGCCAGAG  
CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GCTCAACACC ATCCAGCCCC CTTCTCTCTG GGTGCTGTTG GTGCTGGCCA  
CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC  
CTGGCCGAG CAGACCTGAT CTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC ACAAACCTCG ACTGGCTCTT  
TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCTG ATGCTGGTGA  
GCATCGACCG CTACCTGGCC CTGGTGAATA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC  
TTGGTGATCT GGGGGTGTAC GCTGCTCTG AGCTACCCA TGCTGGTGT CCGGACCATG AAGGAGTACA GCGATGAGGG  
CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTACCAA CATGCTCTG AATGCTGTGG  
GCTTCTGCT GCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG  
TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC  
CTTCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG  
TAATCACACA GATCGCCTCC TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC  
TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA  
CTCCATGGG CACTGCGGA CCTCCATCTC CGTGAACGC CAGATTACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT  
GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC  
AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACGGGAG ACTAATTCCT GNCCTGCCCA  
ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACCTA CGCAGAGCCA AGGACTCAA AATCACAA GCATTACTGT  
TCTTATTGCG TGCCACACCT GAGCCAGCCT GTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGCAGGGAGA GGAGTGACTG  
AGCTTCCCTC CCGTGTGTTT TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT  
GCAATGGCTG AGTGACAAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT  
GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT CACTGATGGA  
CAAGGGAGGT CTGTGCCAAA GAAGAATCCA ATAAGCATAT ATTGAGCACT TGCTGTATAT GCAGTATTGA GCACTGTAGG  
CAAGAGGGAA GAAAGAGAAG GAGCCATCTC CATCTGAAG GAACTCAAAG ACTCAAGTGG GAACGACTGG CACTGCCACC  
ACCAGAAAGC TGTTGACGA GACGGTCGAG CAGGGTGTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTC

GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCTC TTCTGTAACA TGAAGTCGTT GTGAGGGTTA  
AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACGT  
GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGA TGATCCTATC ACAACCTGAG AGTAGTTTTT ACTCCATTTA  
CAGGTGAGGT CATGTGGTT CAAGGACGTT AAGTAACTTC CCCAGCTCAC ACGGCTTATA AGTAAGGCAG CCAGGATGTG  
AACCCAGTAG GACTATCTGG CTGCAAAGTC CCCACCTCC CTCGCCATCT GTATCCTCCA ATCATCTTCA GTGCTTTGCT  
GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG AAGACAGAAA CTAGGCAGAT GGGCTGGCCA TGGTCTCCAA  
GCCAGACTGG AATCTCCAGG TCTGGAATGA TATCATTTTT CTCTTTAAT AAATTAATC ACCCACCACA CGGCTTTGAG  
AGGCTCAAAG GTGACCAACT CCCTTGGGAG GGGCCCGTT GATAAGGAAG GAATGTGAAT CCTCCCATCA CGGAAGCTTC  
AAGGAGGTCA AGGGTCCAAC ACTTGAGATT GTTAGTGCTG TTGGTGGATA CTGCAGAATA TCCAGTGGAG CCTCAGATGA  
AGAACATGAG GCCCCGTTTA GATCCAAGGA TCAGAGGGGG CTCTGTAAGA CCCAGGGGAG TCAGGTGCAC TGGAGCGGG  
GCTGCAGAAA ACAGCTGAG CTCCACCTCG GCTTCTCCTT GCCCTGGCTG GTTGTCTTCA ACCCTGTCT CCTTCTGGAC  
CAGTTTTTGT CCTTCCCTTG TGACCTGAGG GGTAACAGCC TCTTTCCAC TTTCTTTCAG CGCCGACATG CTCAATGTCA  
CCTTGCAAGG GCCCACTCTT AACGGGACCT TTGCCAGAG CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GCTCAACACC  
ATCCAGCCCC CCTTCTCTG GGTGCTGTTT GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA  
CAAGAGCAGC TGCACGGTGG CAGAGATCTA CTGGGGAAC CTGGCCGAG CAGACCTGAT CTGGCCTGC GGGCTGCCCT  
TCTGGGCCAT CACCATCTCC AACAACCTCG ACTGGCTCTT TGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC  
ATGAACCTGT ACAGCAGCAT CTGTTTCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAATA ECATGTCCAT  
GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TTGGTGTATCT GGGGGTGTAC GCTGCTCTG AGCTACCCA  
TGCTGGTGT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGTA CCCATCCTC  
ATCTGGGAAG TGTTACCAA CATGCTCTG AATGTCGTGG GCTTCTGCT GCCCTGAGT GTCATCACCT TCTGCACGAT  
GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG  
TCCTGGTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCCTC  
GGCATCCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCCTCC TTCATGGCCT ACAGCAACAG  
CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC  
AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC AACTGCGGA CCTCCATCTC CGTGAACGC  
CAGATTACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGAAGGA  
TTGAGGGACA GTTGTCTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTGTGA  
TGCTCCGGT AAAACACCGG AGACTAATTC CTGCCCTGCC CAATTTTCGA GGGAGCATGG CTGTGAGGAT GGGGTGAAC  
CACGCACAGC CAAGGACTCC AAAATCACAA CAGCATTACT GTTCTTATTT GCTGCCACAC CTGAGCCAGC CTGCTCTTC  
CCAGGAGTGG AGGAGGCTG GGGGAGGGAG AGGAGTGAAT GAGCTTCCCT CCCGTGTGTT CTCCGTCCCT GCCCCAGCA  
GACAACCTAG ATCTCCAGGA GAACCTCCAT CCACGTTTGG TGCAATGGCT GAGTGCACAA GTGAGTTGTT GCCCTGGGTT  
TCTTTAATCT ATCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTAAAGCC CTGAGGGGTC CCTTGATAAC  
AACCTGGAGA CCAGGATTTT ATGGCTCCCC TCACTGATGG ACAAGGAGGT CTGTGCCAAA GAAGAATCAA TAAGCACATA  
TGAGCACTT TGTATATCAG TATTGAGCAC TGTAGGCA ATGTTCTCTC CTGGAAGAT ATCAATGTTT CTGTCTGTTT  
GTGAGGACTC CGTGCCACC ACGGCTCTT TCAGCGCCGA CATGCTCAAT GTCACCTTG AAGGGCCAC TCTTAACGGG  
ACCTTTGCCC AGAGCAAATG CCCCCAAGT GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTTC TCTGGGTGCT  
GTTCTGCTG GCCACCCTAG AGAACATCTT TGCTCTCAGC GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA  
TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC  
TTCGACTGGC TCTTTGGGA GACGCTCTGC CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT  
CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCTGGTG AAAACCATGT CCATGGGCCG GATGCGCGGC GTGCGCTGGG  
CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CCGAGCTCA CCCATGCTGG TGTCCGGAC CATGAAGGAG  
TACAGCGATG AGGGCCACAA CGTACCCTGT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTC CCAACATGCT  
CCTGAATGTC GTGGGCTTCC TGCTGCCCT GAGTGTATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA  
ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCTGG TTGTGCTGCT GCTATTCATC  
ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA CGTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA  
GCGCATCATC GATGTAATCA CACAGATCGC CTCCTCATG GCCTACAGCA ACAGCTGCT CAACCCACTG GTGTACGTGA  
TCGTGGGCAA GCGCTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC  
ATTAGATGG AGAATCCAT GGGCAGACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAACTGC AGGACTGGGC  
AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTGTGTA AGGATTGAGG GACAGTTGCT T  
ATGTTCTCTC CTGGAAGAT ATCAATGTTT CTGTCTGTT GTGAGGACTC CGTGCCACC ACGGCTCTT TCAGGCGGA  
CATGCTCAAT GTCACCTTG AAGGGCCAC TCTTAACGGG ACCTTTGCCC AGAGCAAATG CCCCCAAGT GAGTGGCTGG  
GCTGGCTCAA CACCATCCAG CCCCCCTTC TCTGGGTGCT GTTCTGCTG GCCACCCTAG AGAACATCTT TGCTCTCAGC  
GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC  
CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGA GACGCTCTGC CGCGTGGTGA  
ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCTGGTG  
AAAACCATGT CCATGGGCCG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT  
CCTGAGCTCA CCCATGCTGG TGTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTACCCTGT TGTGTCATCA  
GCTACCCATC CCTCATCTGG GAAGTGTTC CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCT GAGTGTATC  
ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG



GGCCACGGTG CTAGTCTCTGG TTGTGCTGCT GCTATTCATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA  
CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCTTCATG  
GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA  
CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA  
TCTCCGTGGA ACGCCAGATT CACAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG  
AATTTGTGTA AGGATTGAGG GACAGTTGCT T GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG  
GCTCCGAGGA GGGGTGGGGA CGGTGGGGAC ATCAGGCTGC CCCGAGTAC CAGGGAGCGA CTGAAGTGCC CATGCCGCTT  
GCTCCGAGGA AGGTGGGTGC CGGGCAGGGG CTGCTCCAGC CGCCTCACCT CTGCTGGGAG GACAACTGT CCCAGCACAG  
AGGGAGGGAG GGAGGGCAGG CAGCGGGGAG AAGTTTCCCT GTGGTCTGG GGAGTT GCCCTTCAAA GATGAGCTGT  
TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGCC  
CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTT CTCCGAGAA GGTGGGTGCC GGGCAGGGGC TGCTCCAGCC  
GCCTCACCTC TGCTGGGAGG ACAAAGTGC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG  
TGGTCTGGG GAGTT GAGCTCTTCA ATATTTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA  
CACACCTTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC AGGAACTCC  
AGATTAAGGA GCCCAATGT GGTGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA  
CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCATAAAC TGATCTGAGA CTCTGTTTCC  
CTGTCTCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG  
ATGGGCTGGG GGGACGCTCT CTGGCCCTCC TGCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT CTCTTCTGAA  
GGAAGGGTTT TAAGGCTTCA AAAAAAATG TTTTGAAGT CCCTGCCCTT TCCAGTCTCT ACCGTCTCAG CCCTGGGAGT  
GTAAAGTGCT GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC  
GCCATACATC TCCGAAGAAA CGGCCGCGTG TCTCAGGGGA GCGCAAAAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC  
ACTGTGCCCC TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCCAGGACT CCGCCTGCCC ACCTGGCCAC CCTCTGTTTA  
CACCTTCCGC GTAAACGCCC ACTGTTTACA TCCAAAACCT AGACACAAAA TAACCACCTC AAGAAGATAA ATAATGATAA  
GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGGC TTCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTTT  
GCCGTCCAC GACTCCAACG GGCAGCCGGG CCTACGCAA CATGGAAATC TTCCAAGAGC CTCCTGGCC CCCAGGGCTC  
AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT  
GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT  
CCCGCCGCCA CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGGAC GGTGGTGACG GTGGGGACAT CAGGCTGCC  
CGCAGTACCA GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG  
CCTCACCTCT GCTGGGAGGA CAACTGTCC CAGCACAGAG GGAGGGAGGG AGGGCAGGCA GCGGGGAGAA GTTCCCTGT  
GGTCTGGGG AGTTGGGAAA AGTTCCCTTC CTTCGGAGG GAGG GAATTCGGGA AAAAGTGAAG GTGTAAGGC  
AGCACAAGTG CAATAAGAGA TATTTCTCA AATTTGCCCTC AAGATGGAAA CCCTTTGCCCT CAGGGCATCC TTTTGGCTGG  
CACTGGTTGG ATGTGTAATC AGTGATAATC CTGAGAGATA CAGCACAAT CTAAGCAATC ATGTGGATGA TTTACCACT  
TTTCGTGGCA CAGAGCTCAG CTTCCTGGTT ACCACTCATC AACCCTACTA TTTGGTCTA CCCAGCAATG GCTCAATGCA  
CAACTATTGC CCACAGCAGA CTAAAATTAC TTCAGCTTTC AAATACATTA AACTGTGAT ATCTGTACT ATTTTCATCG  
TGGAATGGT GGGGAATGCA ACTCTGCTCA GGATCATTTA CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA  
GCCAGTCTTG CCCTTGGAGA CCTTATCTAT GTGGTCATTG ATCTCCCTAT CAATGTATTT AAGCTGCTGG CTGGGCGCTG  
GCCTTTTGAT CACAATGACT TTGGCGTATT TCTTTGCAAG CTGTTCCCTT TTTTGAGAA GTCCTCGGTG GGGATCACCG  
TCTCAACCT CTGCGCTCTT AGTGTGACA GGTACAGAGC AGTTGCCCTC TGGAGTCGTG TTCAGGGAAT TGGGATTCTT  
TTGGTAACTG CCATTGAAAT TGTCTCATC TGGATCCTGT CCTTATCTT GGCCATTCTT GAAGCGATTG GCTTCGTCAT  
GGTACCCTTT GAATATAGGG GTGAACAGCA TAAAACCTGT ATGCTCAATG CCACATCAA ATTCATGGAG TTCTACCAAG  
ATGTAAAGGA CTGGTGGCTC TTCGGGTTCT ATTTCTGTAT GCCCTGGTG TGCATGCGA TCTTCTACAC CCTCATGACT  
TGTGAGATGT TGAACAGAAG GAATGGCAGC TTGAGAATTG CCCTCAGTGA ACATCTTAAG CAGCGTCGAG AAGTGGCAAA  
AACAGTTTTT TGCTTGGTTG TAATTTTTCG TCTTTGCTGG TTCCCTCTTC ATTTAAGCCG TATATTGAAG AAAACTGTGT  
ATAACGAGAT GGACAAGAAC CGATGTGAAT TACTTAGTTT CTTACTGCTC ATGGATTACA TCGGTATTAA CTTGGCAACC  
ATGAATTCAT GTATAACCC CATAGCTCTG TATTTTGTGA GCAAGAAAT TAAAAATTGT TTCCAGTCAT GCCTCTGCTG  
CTGCTGTTAC CAGTCCAAAA GTCTGATGAC CTCGGTCCCC ATGAACGGA CAAGCATCCA GTGGAAGAAC CACGATCAAA  
ACAACCACAA CACAGACCGG AGCAGCCATA AGGACAGCAT GAAGTACCA CCCTTAGAAG CACTCTCGG TACTCCATA  
ATCCTCTCGG AGAAAAAAT CACAAGGCAA CTGTGAGTCC GGAATCTCT TCTCTGATCC TTCTTCTTA ATTCCTCC  
ACACCAAGA AGAAATGCTT TCCAAAACCG CAAGGGTAGA CTGGTTTATC CACCCACAAC ATCTACGAAT CGTACTCTT  
TAATTGATCT AATTTACATA TTCTGCGTGT TGTATTGAGC ACTAAAAAAT GGTGGGAGCT GGGGGAGAAT GAAGACTGTT  
AAATGAAACC AGAAGGATAT TTAATCTTT TGCATGAAAA TAGAGCTTTC AAGTACATGG CTAGCTTTTA TGGCAGTTCT  
GGTGAATGTT CAATGGGAAC TGGTACCAT GAACTTTAG AGATTAACGA CAAGATTTTC TACTTTTTTT AAGTGATTTT  
TTGTCTCTC AGCCAAACAC AATATGGGCT CAAGTCACTT TATTTGAAA TGTCAATTTG TGCCAGTATC CCGAATTC  
GCCACCATGG AAACCTTTG CCTCAGGGCA TCCTTTTGGC TGGCACTGGT TGGATGTGTA ATCAGTGATA ATCCTGAGAG  
ATACAGCACA AATCTAAGCA ATCATGTGGA TGATTTCACC ACTTTCTGTG GCACAGAGCT CAGCTTCTCT GTTACCCTC  
ATCAACCCAC TAATTTGGTC CTACCCAGCA ATGGCTCAAT GCACAATAT TGGCCACAGC AGACTAAAAT TACTTCAGCT  
TTCAAATACA TTAACACTGT GATATCTTGT ACTATTTTCA TCGTGGGAAT GGTGGGGAAT GCAACTCTGC TCAGGATCAT  
TTACCAGAAC AAATGTATGA GGAATGGCCC CAACGCGCTG ATAGCCAGTC TTGCCCTTGG AGACCTTATC TATGTGGTCA

TTGATCTCCC TATCAATGTA TTAAAGCTGC TGGCTGGGCG CTGGCCTTTT GATCACAATG ACTTTGGCGT ATTTCTTTGC  
AAGCTGTCC CCTTTTGA GAAGTCTCG GTGGGGATCA CCGTCTCAA CCTCTGCGT CTTAGTGTG ACAGGTACAG  
AGCAGTTGCC TCCTGGAGTC GTGTTACGGG AATTGGGATT CCTTTGGTAA CTGCCATTGA AATTGCCTCC ATCTGGATCC  
TGTCCTTAT CCTGGCCATT CTGAAGCGA TTGGCTCGT CATGGTACCC TTGAATATA GGGGTGGACA GCATAAAACC  
TGTATGCTCA ATGCCACATC AAAATTTCATG GAGTTCTACC AAGATGTAAA GGACTGGTGG CTCTCGGGT TCTATTCTG  
TATGCCCTTG GTGTGCACTG CGATCTTCTA CACCCTCATG ACTGGTGAGA TGTGAACAG AAGGAATGGC AGCTTGAGAA  
TTGCCCTCAG TGAACATCTT AAGCAGCGTC GAGAAGTGGC AAAAACAGTT TTCTGCTTGG TTGTAATTTT TGCTCTTTGC  
TGGTTCCTC TTCAATTAAG CCGTATATTG AAGAAAACTG TGTATAACGA GATGGACAAG AACCGATGTG AATTACTTAG  
TTTCTTACTG CTCATGGATT ACATCGGTAT TAACTTGGCA ACCATGAATT CATGTATAAA CCCCATAGCT CTGTATTTTG  
TGAGCAAGAA ATTTAAAAAT TGTTTCCAGT CATGCCTCTG CTGCTGCTGT TACCAGTCCA AAAGTCTGAT GACCTCGGTC  
CCCATGAACG GAACAAGCAT CCAGTGAAG AACACGATC AAAACAACCA CAACACAGAC CGGAGCAGCC ATAAGGACAG  
CATGAACTGA CCACCTTAG AAGCACTCCT GAATTCGGGA AAAAGTGAAG GTGTAAAGC AGCACAAGT CAATAAGAGA  
TATTTCTCA AATTTGCTC AAGATGGAAA CCTTTGCCT CAGGGCATCC TTTTGGCTGG CACTGGTTGG ATGTGTAATC  
AGTGATAATC CTGAGAGATA CAGCACAAT CTAAGCAATC ATGTGGATGA TTCCACCACT TTTCGTGGCA CAGAGCTCAG  
CTTCTGTTT ACCACTCATC AACCCACTAA TTTGGTCTA CCCAGCAATG GCTCAATGCA CAACTATTGC CCACAGCAGA  
CTAAATTAAC TTCAGCTTTC AAATACATTA AACTGTGAT ATCTTGACT ATTTTCATCG TGGGAATGGT GGGGAATGCA  
ACTCTGCTCA GGATCATTTA CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA GCCAGTCTTG CCCTTGGAGA  
CCTTATCTAT GTGGTCATTG ATCTCCCTAT CAATGTATTT AAGCTGCTGG CTGGGCGCTG GCCTTTTGAT CACAATGACT  
TTGGCGTATT TCTTTGCAAG CTGTTCCCT TTTTGAGAA GTCCTCGGTG GGGATCACCG TCCTCAACCT CTGCGCTCTT  
AGTGTGACA GGTACAGAGC AGTTGCCTCC TGGAGTCGTG TTCAGGGAAT TGGGATTCTT TTGGTAACTG CCATTGAAAT  
TGCTCCATC TGGATCTGT CTTTATCCT GGCCATTCT GAAGCGATTG GCTTCGTCAT GGTACCCTTT GAATATAGGG  
GTGAACAGCA TAAACCTGT ATGTCAATG CCACATCAA ATTCATGGAG TTCTACCAAG ATGTAAAGGA CTGGTGGCTC  
TTCGGGTTCT ATTTCTGTAT GCCCTTGGTG TGCATGCGA TCTTCTACAC CCTCATGACT TGTGAGATGT TGAACAGAAG  
GAATGGCAGC TTGAGAATTG CCCTCAGTGA ACATCTTAAAG CAGCGTCGAG AAGTGGCAAA AACAGTTTTT TGCTTGGTTG  
TAATTTTGC TCTTTGCTGG TTCCCTCTT ATTTAAGCCG TATATTGAAG AAACTGTGT ATAACGAGAT GGACAAGAAC  
CGATGTGAAT TACTTAGTTT CTTACTGCTC ATGGATTACA TCGGTATTAA CTTGGCAACC ATGAATTCAT GTATAAACC  
CATAGCTCTG TATTTTGTGA GCAAGAAATT TAAAAATTGT TTCCAGTCAT GCCTCTGCTG CTGCTGTAC CAGTCCAAAA  
GTCTGATGAC CTCGGTCCCC ATGAACGGAA CAAGCATCCA GTGGAAGAAC CACGATCAA ACAACCACAA CACAGACCGG  
AGCAGCCATA AGGACAGCAT GAACTGACCA CCCTAGAAG CACTCCTCGG TACTCCATA ATCTCTCGG AGAAAAAAT  
CACAAGGCAA CTGTGAGTCC GGAATCTCT TCTGTATCC TTCTCTTA ATTCACCTCC ACACCAAGA AGAAATGCTT  
TCCAAAACCG CAAGGGTAGA CTGGTTTATC CACCCACAAC ATCTACGAAT CGTACTTCTT TAATTGATCT AATTACATA  
TTCTGCGTGT TGTATTCAGC ACTAAAAAT GGTGGGAGCT GGGGAGAAT GAAGACTGTT AAATGAAACC AGAAGGATAT  
TTACTACTTT TGCATGAAAA TAGAGCTTTC AAGTACATGG CTAGCTTTTA TGGCAGTTCT GGTGAATGTT CAATGGGAAC  
TGGTCACCAT GAAACTTTAG AGATTAACGA CAAGATTTT TACTTTTTT AAGTGATTTT TTTGCTCTC AGCCAAACAC  
AATATGGGCT CAAGTCATT TTATTTGAAA TGTCATTGG TGCCAGTATC CCGAATTC AACAAGAAAA GCGTTGGTAG  
CTCTGGTGAA TCCAAAAAGA ATGTGGCAGT TGCTAGCCAT GCTCCTGAAT ATGTATAAAC AGTACATCAT ATGACTAAGA  
GTTTGACTTA GGGGTTAGAT TTTATGTGT TGAACCCCAA ATTAGTTATT TAATAGTTGG CACCCAAAA CAAGTTACTT  
AACCTCACTA AGGTTCACTT TTCCTGTTA TAAATGTAG ATAGTGATAG TATGTACTTT ATAGGATTAT TGTGAAAAAT  
AAATGAAATA TCAGATTTAT TTAGGATAAC ACCTGGCATA TGTTTGGTAT TCAGAATTAG TTGCTGCTGT TTTATTCTGC  
TCTCCCTTGC ATCCCACTTT TCTAAGTTGT AAATAAATA GTTGACACA GATTGACAGA TTAAGAAAGG CTGTGATTG  
TGCTAGACCT ATGCCTATGC CTCTGTCTCA CCAGATTCCA GGTGTATATG TGGAGGTGGG ATAGGGAGTG GAGTAAGTGG  
GTAAATATTA AATTGCCCAG TTGGGCACCA TCCTGAATAT TATCTCTAAA GAAAGAAGCA AAACCAGGCA CAGCTGATGG  
GTTAACCAGA TATGATACAG AAAACATTTC CTCTGCTTT TTGGTTTTAA GCCTATATT GAAGCCTTAG ATCTCTCCAG  
CACAGTAAGC ACCAGGAGTC CATGAAGAAG ATG GATCTTCATG TGAATGACT GGTTCATT C AATAGACTTA  
ATTCAGCAGT CTGTGGGGAA GAGCAAGGTA TGATAGAATG GTTCTCAAG TGCTTCAGAT GTGAAGTGGG TTAAATATA  
CTGTCCCTGT CTCTTCAGA GTTTTGGTAA AGATAAATA GGACACTCAT TAAAAGCAA TCTTTGAAA TGACAAGCCA  
CTATAGACAT TAATAGAGTT TTCATTTCCA GTATTATCAT TAATATCAGA TCCTGGAAGA AGGTTGAGCC TTGACCTAGA  
GCAAAAAAAC AGAAGAATTA GTAAAGGAAT CTGGAGAAA GCCCTGCTG TGTATTTAAA GGAGAAAGGG AGATCATGTT  
GGGAAATTAT AATATTAATA GTAAACAAA GCTAGGAAGT AAAATAAAAT AAATTATATG GCCTAGATCC CCATAAGTAA  
TGGTTAACT TCTGCTTCC TGTGTCTGA GCCAGATTAG GGCACAGTAG AGAAAGAGGA GTCTCTGAAA ATGTTTCCAA  
TTTCGCTGGT CAGACAGCGG ATCATCAGTG AATCAGATGA AAATTTGTGG ATTTATGCAC TAACTGATCA GCAGGAAAT  
AAACAAGAAA AGCGTTGGTA GCTCTGGTGA ATCCAAAAAG AATTTGGCAG TTGCTAGCCA TGCTCTGAA TATGTATAAA  
CAGTACATCA TATGACTAAG AGTTGACTT AGGGGTTAGA TTTTATGTGT TTGAACCCCA AATTAGTTAT TTAATAGTTG  
GCACCCAAA ACAAGTTACT TAACCTCACT AAGATTCAGT TTCTCTGTT ATAAATGTGA GATAGTGATA GTATGTACTT  
TATAGGATTA TTGTGAAAAA TAAATGAAAT ATCAGATTTA TTAGGATAA CACCTGGCAT ATGTTTGGTA TTCAGTAAT  
AGTTGCTGCT GTTTATTCT GCTCTCCCT GCATCCCACT TTTCTAAGTT GTAACTAAA TAGTTGTACA CAGATTGACA  
GATTAAGAAA GGCTTGTGAT TGTGCTAGAC CTATGCCTCT CTCTACCAG ATTCCAGGTG TATATGTGGA GGTGGGATAG  
GGAGTGGAGT AAGTGGGTAA ATATTAATTT GCCAGTTGG GCACCATCCT GAATATTATC TCTAAAGAAA GAAGCAAAAC  
CAGGCACAGC TGATGGGTTA ACCAGATATG ATACAGAAAA CATTTCTTC TGCTTTTTGG TTTAAGCCT ATATTGAAG



CCTTAGATCT CTCCAGCACA GTAAGCACCA GGAGTCCATG AAGAAGATGG CTCCTGCCAT GGAATCCCCT ACTCTACTGT  
GTGTAGCCTT ACTGTTCTTC GGTAAGTAGA GATTCAATTA CCCCTCCCAG GGAGGCCCAA ATGAATTTGG GGAGCAGCTG  
GGGTAGGAAC CTTTACTGTG GGTGGTGA CTCTTAGGA CATGTGCAAA CTATTGGGCA TTTCCAGGG ACTCTGTAGT  
GGAGCCAAGC TAGAAAGCAG AGGCAAGTGG GCTGAGCAAC ACCTAAGGAG GAAGCCAGAG TGAAAGCTTG GTTCCTTGCA  
TTTGCTCTGG CATCTCCAG AGTGCAAAAT TCCTACCAAG GTAATGAGGG TAGAGGAGAG AAAGAAGCTC TTTCTCCCC  
TGATTCTCAT TCCTGAAAAG ACGGTTGGTC CTTAAAATTC CATGGATGTA GATCTTATCC CCACACCCAG ATTCTAGTCC  
TCTGGAGATA AAGAAGACTG CTGGACACTA ATGTATCCTC TCTGGACTTT TGCAGCTCCA GATGGCGTGT TAGCAGGTGA  
GTCCTCTGTT CTTGTTCCCT TGGTGATCA ACATGTCTGG GCATTGCTTT CTCTCACTA TTTCTTCGT CCCATCACTT  
CTGCTTTCTA ATGAGCATGA ATCTGTTCTT TGGCCAGACT ACTTCCCTC TCCACCTTGC CTTGCTTTC TTTTTTCCC  
TGATTCAATG CATTCTCTCA AGTCATTCTC TCCTCTGTTT TAGTCAATAA CCATGTCTGT TGCACATATA CATGTCTCAT  
TCTCTCTCT AGACACTTTG GCATGATCTC GCTCAATAAT TACATTATTA TTATTATTGC CATTTTATAA TTGAGGATGC  
TGAAACTCAG TGATTTTCTG GTGGTTACAT GGCTAAGGAA CTGGATTICA ACGTAAGTTC CTTGGATCTA AGTCCAGTTC  
TCTCTGACT ATATCACCTT TTTGTTATCA CCATGTATCT ACTTCTTTGG TCTCTGTTCA AATTGCACT ACATCCCCTT  
GTTCCAGGAA GCCATTCAAG ACTGACTTTC TTAGTGCTC TCACTACTTT CTGGAAGTGA CATATGTTTT TCACTCTGTA  
TATACTTACA ATTAAATAGT CATAAATATT CAGAGCTTGG AGAAACCTTA TATTTATCC AGTCCAGTAA ATTTATCCAT  
CCATAATTCA CTCATTCACT CACATAATAA ATATTTAATG TAACAATGGT TGAACATGGC AGACAGTGTT TCTACCTCAA  
AAGAGATTGC AGTCTCATT TACAGATACT GAATTGAAAT TAACAGAAGT AGAGTGAGTC AGCTCAAATC ACATAGTGAA  
TTGGTTTCTT TGTTTTTAAA TCTCTGCAAT ATGTGTCCTG TCTTTCTCCC TGTGTTGGGC GTTCCCTGGG GCACCAATAC  
TAATTTCTCC TTCCCTAGA AATCAAAACA GGGTCTTATC ACCAACAGAA TAAGGACAGG TTGACCACTG ATTGTCAGAA  
TATTGCTTCG TTTGTACTTT TAAGCCTAGA CAGTTTTCAA TGACTTTTT TCTCTCTACA TGTCTTTTCA TATTTTATC  
TTCTGAAGT CCCTCAGAAA CCTAAGGTCT CCTGAAACCC TCCATGGAAT AGAATATTTA AAGGAGAGAA TGTGACTCTT  
ACATGTAATG GGAACAATTT CTTGGAAGTC AGTTCACCA AATGGTTCCA CAATGGCAGC CTTTCAGAAG AGACAAATTC  
AAGTTGAAT ATTGTGAATG CCAAATTTGA AGACAGTGGA GAATACAAAT GTCAGCACCA ACAAGTTAAT GAGAGTGAAC  
CTGTGTACCT GGAAGTCTT AGTGGTAAGT TCCAGGGATA TGGAAATACA GATCTCTCAT GTGAGGGATG GCTCATCTGA  
AGATGGGAAA AAACAGGTTA TTCCAAGGGT TAGGACACCA GAGTGGGATT CAAGGCCTCT CATTTTTAAG ACCCTGCAAT  
TGGCTGGGCA CAGTGGCTCA CGCTGTAAT CCCAGCACTT TGGGAGGCTG AGGCAGGTGG ATCAGGAGGT CAGGAGATCG  
AGACCATCCG GCTAACATGG TGAAACCCCA TCTCTGCTAA AAAATATATA TATATAAAAT TAGCCGGGCG TAGTGGTGGG  
CACCTGTAGT CCCAGTACT CGGGAGGCTG AGGCAGGAGA ATGGTGTGAA CCCAGGAGGT GGAGGTTGCA GTGAGCTGAG  
ATCAGCCAC TGCCCTCCAG CCTGGGCTAC AGAGCAAGAC TCCGTCTCAA AAAATAAATA AATAAATAA AAAGACCCCT  
GCATCTCTT TCTCTACCC CTTCCCTTT TGATTACTTG TATGCCTTCT TTCAATATTC TAGTCATCTC TCAATATTAT  
TCTCCACCC TATTTCTCTC TATCTTTCT GCCTAGATT AGGTATATAT TATGTGGTCA AACAGCATGA CATATATGTG  
AACATTTCAA AGAGCTGTGT ATCTGGAATA GGATCAAAAG GTTTGACTTA AAGTTTGTCT CTGCATAATC CATATGGCAG  
GACCTGAATA TTAGGTTGTA CTCTCGTTA TGAAACATAT CTGGGTACAT TTCCTTATGT CCTCTGTGT TACTTAAGAA  
CACATATTT ATGCTTGTGTT CATTTTTATC ACTCTACTG CCAACAAATA GCATAGCATG CTTAGGCACA TGTGGCTTAA  
TTAGCAAAATG TTGAATAAAC AAATTAATGA TTTTGAATAG TGACCAATAG GTCTCTTTTA TACTCTATAT TTTCTCTTG  
AGTGAAAAAA AATGTTTCAA CCTCCATATG TAAATCCAA ACACAACTA AAGCAATGTA GAATAGCTTC TTTATTCCCT  
GGAGTAGGTT CTAGAGAAGT CCTAAAGGAT TGGTCTTAAA TTAATTATGC TTATTATGCT AGCGATATTT CTTTCAAAA  
TTCTCTTTA ATGAATGCTT TTAAATTTT ACAAAGCAT TAACCATAGA ATGTGATTCT TGTCTTTCAC TGACTCATT  
GTGACAAATA TTTGTTGAGT ACCTACCAAC TCCTAAGTAT TGCTACCAAC TCCTAAATAC TGTGTTGGG ATTGAGAATA  
GAATGTAGAA CTAGACAGGG TCCTGACTT CTGGAGCAC AGAGCAGTAT GGAAGAGGA CATTAAATAA AGAATTACAT  
AAGTAATTA TTTAAATTAT ACATGTTTIG AAGAAGTTTT TTTTGACAA CTATAATTA CACTAGAACT GGAAGTTTC  
TATAAGGTAA GAGAGGACAA AATAGACACT CTCCTAAGCT AAAATCCCA AGAAAGACTG TTTATTTTCC CCTAACTAAC  
TAGAACTAGC AACAGAAGAT CTGAAAGGAA TTCTGGCTTT CAAGTGTTC ATGTATGGAC TCATCAGGGA GGTCCGAGAG  
GCTTTGTGGC CCCAGACTGA CTTTTCAGGA GGGGAAAGGA TTTATCAATA CACAAGACAG GCTCTAAGCA TTATTTGTG  
CCCTTAAAA ATCCACTTTA TGAGCCAAAA AGTGAGTTAA TGATAATTCA TAGTTTCTGA CACATGCTCT ATGCGTGGCT  
CTCTTTCTC TATTCATTCT CTCTCTCTC ATTTATTGTT AAATAAATAA TGTAATGAAT GTTCTTCAGA CTGGCTGCTC  
CTTCAGGCCT CTGCTGAGGT GGTGATGGAG GGCCAGCCCC TCTCTCTCAG GTGCCATGGT TGGAGGAACT GGGATGTGTA  
CAAGGTGATC TATTATAAGG ATGGTGAAGC TCTCAAGTAC TGGTATGAGA ACCACAACAT CTCCATTACA AATGCCACAG  
TTGAAGACAG TGGAACCTAC TACTGTACGG GCAAAGTGTG GCAGCTGGAC TATGAGTCTG AGCCCTCAA CATTACTGTA  
ATAAAAGGTG AGTTGGTAAA GGAAAGGAAA AGCATCCATA GCAGGGGAAG GAAGAGAGAA CTTCTGAGCC TGAGCAGTTG  
CAGCTGTAG AAGGGGGGCA CTTGTGATC ACTGGAAAGC CTACCAGACT TGCAATGAGG AGACCTGGGT GATAGTATAT  
ATCTCAATCT CTGTTTCAA GCCTTGACTT GTTAAATGGT GATAGTAATA CTGCTTGCA CTATGAAAT TTTATGAAGA  
TTAATGTGGT AATATTGTG AAATGACTTT GTAAACTGTT AAGCACTACC CAAGCATAAC AGATTGTGAT TACTATTTTG  
ATCTCAAAGT CATCTGTTGC TCCTGGGGGA ACCTTATAT TTATCAAAT GAAAAAAGT TTCAAAGTTG AATGAAGAAA  
GGATATAAG AGCTTGAGGA GCCCATCCA GCTTAGGAGG GCTGGGAAAG GAAACCAGCA AGTCAGTAAG CTGTGTGCT  
GTGTATTGAG GGAGGAGGGA ATGGACTTGA TATGGAGAGG GTAGGGAGGT GGAAGCTC TATGGCTGT AAGAAAACT  
GCTCTCTCA AACTCTTTAT AAGAGAGGGA GCCTGTGAAG TATTCATTT TGAAGGAGAA AGTAGACTT TTCCTTACA  
CACTTTGTAC ATAATAATGT TAAAAAAGC ATGAGGTCAA AATACATAAT TAAGTCCTAG CAGTTCTCTG TTAACATAAT  
TGAGACTGAA GTGCTATGTA CTGTCTCTA GGCTTCCAGT ATCTTCATCT GTAAAAACA ATATTTGGTC TAGATTCCAT

TAGAATCATT TGATAACTTA AAAAATATAT TGATGCTCAT GTCTCATTTT TTAGATTCT GATTTAATTG GTTTGGGGTG  
CAGCCTGGGT ATACGTATTT TTCATAGGTC TTTCACATAA TGGTAATGGG TAGCCAATAT TGAGAATCAC TTGTCTAGGT  
GATCTTTAAA TGATTCTGG ATGTAATATT CTGAGGCTCT ATAATTTGAG ACTAATCACA AAAATCGGTA CAGTTTATAA  
ACAGACTAAC AGAACCACAA AATAATAGAA TTGGAAGGCA ATTTAACTAG TGCAATTTCT TCATTTTGCC TAACAGGCAT  
GTAAGAAATG ATGATTGATT GAGTAATAGG CATTGATGAC CCCTGTCTC ACTTTGTCCC CTTTCCACCC CTTAATTATA  
TGTGAATTCT GGTCTTGTC TTTGGAATAA GGGGTTTATC TTCTCTATTG TCTTCCCCTC TGGGCACGGC AACTGGGCTA  
CTGGAGTTAA GAGGAAATGC TTAGGACTCC CTGTGGCTCC AGGGAGCACC AACAGAGCAA CTCAACCTAG TGTTAATCTG  
AGTGTCTTCT CTGTGCTTCT GGATGCCACA TCACGCTAAA AATGAAGGAC AAAGCTTGGT CTTTCTCTTA GGGAGGATGA  
AACTCTGAAC CTCATTTTTC AGTTCCCAAG ATGAATTATG TTCTCATTG CATCTGTGTT CCACTACAGC TCCGCGTGAG  
AAGTACTGGC TACAATTTTT TATCCCATG TTGGTGGTGA TTCTGTTTGC TGTGGACACA GGATTATTTA TCTCAACTCA  
GCAGCAGGTC ACATTTCTCT TGAAGATTAA GAGAACCAGG AAAGGCTTCA GACTTCTGAA CCCACATCCT AAGCCAAACC  
CCAAAAACAA CTGATATAAT TACTCAAGAA ATATTTGCAA CATTAGTTTT TTTCCAGCAT CAGCAATTGC TACTCAATTG  
TCAAACACAG CTGCAATAT ACATAGAAAC GTCTGTGCTC AAGGATTTAT AGAAATGCTT CATTAAACTG AGTGAACTG  
GTTAAGTGGC ATGTAATAGT AAGTGCTCAA TTAACATTGG TTGAATAAAT GAGAGAATGA ATAGATTCAT TTATTAGCAT  
TTGTAAGAGA GATGTTCAAT TTCAATAAAA TAAATATAAA ACCATGTAAC AGAATGCTTC TGAGTATTCA AGGCTTGCTA  
GTTTGTITGT TTGTTTTCTA CTAAAGGCAA GGACCATGAA GTTCTAGATT GGAAATGTCC TCTCTTGACT ATTGCAAGTG  
CGATCTAGGA ATGAAAAGAC ATAGGAGGAT GCCAGTGAGG TGGATCATT TTAGTCTTCT TCTTCAGCTT ACTAAATATG  
AACTTTCAGT TCTTGGCAGA ATCAGGGACA GTCTCAAGAC ATAGGACTCT CAGGATGAAG TAGAGTCCAG GATTCCTCTG  
TGATTGTTTT GCCCTCCCA AATTTATATC TTGAACTTAT GTCTGTATC TTTATACAGC ACCTGAACCA AGCATTITGG  
AGAAATTCCA GCTAATAATA ATAACCAAAA CCTTCGGCTC TGAACACAGT CCAGGACTGA ATAAGATCTT GGGCAAAAGA  
ACTAGACAGT TTTGGTTTAT TTTCCCTTTC ATTTTATGTC TTCATCATAG TCATTGGAGG CTCATTCTTC TTGTCATGGA  
GTAAATGGGA TTAAAGTTC TACTAAGAGT CTCCAGCATC CTCCACCTGT CTACCACCGA GCATGGGCCT ATATTGGAAG  
CCTTAGATCT CTCCAGCACA GTAAGCACA GGAGTCCATG AAGAAGATGG CTCTGCCAT GGAATCCCCT ACTCTACTGT  
GTGTAGCCTT ACTGTCTTC GCTCCAGATG GCGTGTAGC AGTCCCTCAG AAACCTAAGG TCTCCTTGAA CCTCCATGG  
AATAGAATAT TTAAAGGAGA GAATGTGACT CTTACATGTA ATGGGAACAA TTTCTTTGAA GTCAGTTCCA CCAAATGGTT  
CCACAATGGC AGCCTTTCAG AAGAGACAAA TTCAAGTTG AATATTGTGA ATGCCAAAT TGAAGACAGT GGAGAATACA  
AATGTCAGCA CCAACAAGTT AATGAGAGTG AACCTGTGTA CCTGGAAGTC TTCAGTGACT GGCTGCTCCT TCAGGCTCT  
GCTGAGGTGG TGATGGAGGG CCAGCCCCTC TTCCTCAGGT GCCATGGTTG GAGGAACTGG GATGTGTACA AGGTGATCTA  
TTATAAGGAT GGTGAAGCTC TCAAGTACTG GTATGAGAAC CACAACATCT CCATTACAAA TGCCACAGTT GAAGACAGTG  
GAACCTACTA CTGTACGGGC AAAGTGTGGC AGCTGGACTA TGAGTCTGAG CCCCTCAACA TTAGTGTAAT AAAAGCTCCG  
CGTGAGAAGT ACTGGCTACA ATTTTTATC CCATTGTTGG TGGTGATTCT GTTTGCTGTG GACACAGGAT TATTTATCTC  
AACTCAGCAG CAGGTCACAT TTCTCTTGAA GATTAAGAGA ACCAGGAAAG GCTTCAGACT TCTGAACCCA CATCCTAAGC  
CAAAACCCAA AAACAACCTGA TATAATTACT CAAGAAATAT TTGCAACATT AGTTTTTTTC CAGCATCAGC AATTGCTACT  
CAATTGTCAA ACACAGCTTG CAATATACAT AGAAACGTCT GTGCTCAAGG ATTTATAGAA ATGCTTCATT AAAGTGAAGT  
AAAGTGGTTA AGTGGCATGT AATAGTAAGT GCTCAATTAA CATTGGTTGA ATAAATGAGA GAATGAATAG ATTCATTAT  
TAGCATTGT AAAAGAGATG TTCAATTTCA ATAAATATAA TATAAACCA TGTAACAGAA TGCTTCTGAG TAAAAA  
AAAAAAAAA AAAAAA TCTCAATATA ATAATATTCT TTATTCCTGG ACAGCTCGGT TAATGAAAAA ATGGACACAG  
AAAGTAATAG GAGAGCAAT CTGCTCTCC CACAGGAGCC TTCCAGTGTG CTGCATTG AAGTCTTGA AATATCTCC  
CAGGAAGTAT CTTAGGCAG ACTATTGAAG TCGGCCTCAT CCCCACT GCATACATGG CTGACAGTTT TGAAGAAAGA  
GCAGGAGTTC CTGGGGTAA CACAAATTCT GACTGCTATG ATATGCCITT GTTTTGAAC AGTGTCTGC TCTGTACTTG  
ATATTTCACA CATTGAGGGA GACATTTTT CATCATTTAA AGCAGTTAT CCATTCTGGG GAGCCATATT TTTTCTATT  
TCTGGAATGT TGTCAATTAT ATCTGAAAGG AGAAATGCAA CATATCTGGT GAGAGGAAGC CTGGGAGCAA AACTGCCAG  
CAGCATAGCT GGGGGAACGG GAATTACCAT CTGATCATC AACCTGAAGA AGAGCTTGGC CTATATCCAC ATCCACAGTT  
GCCAGAAAT TTTTGAGACC AAGTGCTTTA TGGCTTCTT TTCCACTGAA ATGTAGTGA TGATGCTGTT TCTACCAT  
CTGGGACTTG GTAGTGCTGT GCACTCACA ATCTGTGGAG CTGGGGAAGA ACTCAAAGGA AACAAGGTT CAGAGGATCG  
TGTTTATGAA GAATTAACA TATATTCAGC TACTTACAGT GAGTTGGAAG ACCCAGGGGA AATGTCTCCT CCCATTGATT  
TATAAGAATC ACGTGTCAG AACACTCTGA TTCACAGCCA AGGATCCAGA AGGCAAGGT CTGTGTAAGG GGCTACTGGA  
AAAATTCTA TTCTCTCCAC AGCCTGCTGG TTTT AAGCTTTTCA AAGGTGCAAT TGGATAACTT CTGCCATGAG  
AAATGGCTGA ATTGGGACAC AAGTGGGGAC AATTCCAGAA GAAGGGCACA TCTCTTCTT TTCTGCAGTT CTTTCTCACC  
TTCTCAACTC TACTAAAAT GTCTCATTT CAGGTCTGT AAATCCTGCT AGTCTCAGGC AAAATTATGC TCCAGGAGTC  
TCAAATTTT TATTTCATA TTAGTCTTTA TTTAGTAGAC TTCTCAATTT TTCTATTAT CACAAGTAAA AGCCTGTTGA  
TCTTAATCAG CCAAGAACT TATCTGTCTG GCAATGACT TATGTATAA GAGAATCATC AATGTCATGA GGTAAACCAT  
TTCAACTGCC TATTCAGAGC ATGCAGTAAG AGGAAATCCA CCAAGTCTCA ATATAATAAT ATCTTTATT CCTGGACAGC  
TCGGTTAATG AAAAAATGGA CACAGAAAGT AATAGGAGAG CAAATCTTGC TCTCCACAG GAGCCTTCCA GGTAGGTACA  
AGGTATTATT TTTTCTACC CTCAGTCACT TGTGGCAGGG GAAGTCATAG TCACGGTGCT TAGGAGATGA AACTTTATTG  
ATTAGGCAT GGATCCATCT AGTTTAATTA ATATATTGGG TATGAGGAAG CTACTGTCTG TACTTTCCAT GTGGTTCTCT  
CTCCCTGGAG AGGAACATTT TACTCAGCT TGCAACTGG AAATAGATT TCTCACATTA GAAGTCTATT TTCTGGGTAT  
GAGACAGGAG AGTTCATACT GTGTATGTAG ATCTCTGGCT TCTGGGCTG ACATGTGCTG AGGGACACAT ATCCTTACA  
CATGCTTTA TAAATACTTG ATAAAGTAAC CTGCTTCTG ATTGGTCTT ATAATCCATA AGCTGTGGGA TGCTTCTCTG

AAGATGAAAA TAGTAATAGA GTCCCATCTA GCTATTCAAA GCCATTCTT CATTGTATTC TGTGCACATG AAGTTGGGGT  
TTGTTACTGA CAAAATATAT TCAGATACAT TTCTATGTTA AAAGGATTGT GAGATGCATA GGTAAATGTG TTTATTTTCA  
GTTTTACTTG TCAACATAGA TGAATGAGAA AGAAGTTGAA AGTAACACTG GATTAAGAAT AGGAAAAATT GGCATGGATT  
TTGCTCCATT TTGTCCCATC TAATCACTTG GATAGTGTTC AGGTGTTCTT GGTCAGTTAC TTGGATGCTC TGAGCTTTAG  
TTTCTGGTG ATTACAATGA AGATTTGAAT TACAGGATGG CTTTGAAAAA ATAAACAAAA CTCCCCTTTC TGCTGTGCGA  
GAATGTTGCA CAGGGAGTTA CAGAATGTTT TCATGACTGA ATTGCTTTTA AATTCACAG TGTGCCTGCA TTTGAAGTCT  
TGGAAATATC TCCCCAGGAA GTATCTTCAG GCAGACTATT GAAGTCGGCC TCATCCCCAC CACTGCATAC ATGGCTGACA  
GTTTTGAAAA AAGAGCAGGA GTTCCTGGGG GTGAGTGAGC CTCCTCCAAC TTTGACTAGA GTAAGGGTTG GGTCTAGAAA  
AGAATATTGA GTTGCATCA CTGTTTTCCC ACTTGGATTG ATGAGAGGTG TTAGGTCCTT TAAAAACAT GGTAGATAAA  
GAGTTGACAC TAACTGGGTC CTTTTGGGAA GAGCCAGAAG CATTTCTCA TAAAGACTTT AAATTGCTAG GACGAGAATG  
GCCAACAGGA GTGAAGGATT CATAACTTTA TCTTACTTA GATGTAAAGA ACAATTACTG ATGTTCAACA TGACTACATA  
CATAAAGGCG CATGGAGAAA AGTATTGGCC TTCCATGCAT TAGGTAGTGC TTGTATCAAT TCTTATAGTG GCTAGGGTAT  
CCTGGAAAA CTACGTGTG GATCATTCT CAGGACAGTC TAGGACACTA ACGCAGTTTC TCATGTTTGG CTCTATTAT  
TAAAAATGA TACAATCTCG GGAAAAATTT TTTGATTTTC ATGAAATTCA TGTGTTTTTC TATAGGTAAC ACAAAATCTG  
ACTGCTATGA TATGCCTTTG TTTTGGACA GTTGTCTGCT CTGTACTTGA TATTCACAC ATTGAGGGAG ACATTTTTTC  
ATCATTTAAA GCAGGTTATC CATTCTGGGG AGCCATATTT GTGAGTATAT ATCTATAATT GTTCTGAAA TAACACTGAA  
CATAGGTTTT TCTCTTCTC AGATCTAACC AGTTGTTTAT TCCCAGTATT AAGATGATAT TTATAATTCT TAATTATAAA  
TATATGTGAG CATATATAAC ATAGATATGC TCATTAACAA CAACAAAAGA TTCTTTTAC AATTAACGGT GGGTTAAACA  
TTAGCCAC AGTTTTATCC CATGAGAAAC CTGAATCTAA TACAAGTTAA ATGACTTGCC TAAGGGCCAC TTAGCTAATA  
GTAATTGAAC CTAACTTTC AGAATCCAAC TCCAGGAACA TACTTCTAGC ACTATTCATC AATAAAGTTA TATGATAAAT  
ACATACAAC TATCTGTCA ACTAAAAATA ACAACAGAGG CTGGGCATGG TGGCTCACAC CCGTAATCCC AGCACTTTGG  
GAGGCTGAGG CAGGTGGATC ACCTGAGGTC AGGAGTTTGA GACCAGCCTG ACCAACATGG TGAAACCTCA TCTCTACTAA  
ATATAAAAA TTAGCTGAGT GTGATAGTGC ATACCTGTAA TCCAGTACT TAAGAGGCTG AGGCAGGAGG CTTGTTTGAA  
CCTGGAAGGC AGAGGTTGCA GTGAGCTGAG ATTGTGCCAT TGCCTCCAG CCTGGGCAAT AAGTGCGAAC TCTGTCTCAA  
AATAATAATA ATAATAATAG AAAATAAAGT TGCTTCATG AAAAATGAGG AAAGAGATTG CTGGGGTGAG AAACATTAAG  
ATCAATGGGC ATATGGTGAC CTCTATGCC CTAGAACTC TTTTANGGTA TTTTCTCTG GTATCTCTT TACNCATCGT  
TCTATCTGGA AAAATAGGTG GATGAGTGAG ATAATAACGG TATATACTTT TAAAGGTCT AATTGACATA TATAAATTGC  
AAGTATTTCA GATGTCAATT TGCTAACCTT GACACACATA GACACACATG AAAACATCAC CACATTAATA CAATGTATGT  
ATCCATCATT CCAAAGCTT CCCTGTGTAT CTTTGTAACT CTTCTTCTT CCCTCCACTC CTGTCTCTT CGTTCCCAAG  
AAAACATTGA TCTGCTTCT GTGAATATAA ATTAACCTAC ATTTTTTGA GCCTTATATA AGTATGTTCT CTTTACTGTT  
TGTCTTCTT CGCTGCACAG TTATTTTGAG ATTCTTCAAG TTTTCTCTT ATATCGATAC TTCATTACA AGAATATATT  
TTAATTCTAG ACTATGTCAC ATTGACTTG TCGTCTGCTA AATCCTTAGT GCTCAGATGA CTGTTCAGG ACTCTCCTG  
AACCTGTACC TCTGTTANAT TGAACTTGT CTCTACTGTC TTTTATTTC AAACACAGCT TATTAGGTGT CTCTCAACCC  
ATCAACNCA CAATCTGAGT CTTTAGGAGA TTGCTTGAA TTTGTGCTAT TGACTTATAT NTATATNAAA TNGTAAATG  
TTTGGTAAAA ATATCATCAT GTACNTTTC ATAATTACGC TATNTNCACA TGATATATGT CAGACTCTGG AAATATGCAT  
GCCACAGACA CGTGTCTT GCCTAAAGGG GCTGATGGAA GACNCACATA CNAATAGACG ATTGCAGTAG AATGAGAGTG  
GTGGTCTAAN CAGTACATGT CCTGATGTTG CTCGGACAGT TACTACNCCA AGAGTACCCC CTGCATTGTC AGGGTTAGCA  
TCTCCTGGAA GCCTCATGTA AATGAAGAAT TTCATGCTCC ATCCAGGACC TAATGAATAA GAATCTGCAT TTAGCAAGA  
CCCTCATATG ATTCATATAC ACTTTTTTTT TTTTTTTTA GATGGAGTCT CACTCTGTG CCCCAGGCTG GAGTGCAATG  
GCATGATCTT GGCTCACTG AACCTCTGCC TCCCGGGTTC AAGTGATTCT CTGTCTCAG CCTCCCTAGT AGCTGGGACT  
ACAGGTGCAT GCCACAGTGG CTGGCTAATT TTTGATTTT TAGTAGAGAC AGGGTTTAC CATTTTGGTC AGGCTGGTCT  
TGAATCATG ACCTCCGGTG ATCCCCCGC CTCGGCTTCC CAAAGTGCTG GGATTACAGA CATGAGCCAC CACACCCGCC  
TTATTCGTAT ACNCATTTAA TTCTGAGAAG CACTCTATAG AAAATAAGAA TAAGAAAATA TTGGGCTCAC AGGTGACATT  
AATAAGTAAC TTTATCGAGT ACCCCAAATT TTACCTATGT TTGGAAGATG GGGTTAAAA GACACATTGA AAACAAGAAC  
TCATTGTGGC TTTTTTTTCC TCCTTTTGA ACAGTTTTCT ATTTCTGGAA TGTGTCAAT TATATCTGAA AGGAGAAATG  
CAACATATCT GGTGAGTTGC CCGTTTCTGT CTTGTCCAT CTTGAAAAAG ATAAGAAGAA CAGAGTTTTA AGAGTCTTAA  
GGGAAACACA TCTTTGTCTC CTATATTACT TGTGAATGTG GATATATGAT TTTGTTTCAA TCTATTTGT GTCCTAAGGC  
TTTTTGCAAC AGAAGTTGGA TATATCATTA GAAACATAAA TTGTACCATT TAACATACAT GAAGTTTATG TTTACCTTGA  
CGTTCTTCTA AAAAGTGTCC TACACCGGCA TTGCTCTGT AGGCATATTC ACATGATCAA ATAAAAAAT TAGTTTTCAA  
TTAAGGAGAA TATTGAGGA AAGACCGTAC GTGTTCTATG GGTCTCTGAA GGCAGTCCAG TGAGAAAGTA ATATATGCTT  
CATTAACAA TCGGACATT TTCAGGGTTT CCCTTTTAA CCAAATTTG GAAGCAATGT GGAATTTACT GGATGCATCC  
AGCCCTGAAA TGAAGATAGG TTTATTGAAT GTGCCAGCAA GTGCAGGCC AGGTCTGAGT GTTCTTCAAT ATTATCAGGT  
GAGAGGAAGC CTGGGAGCAA AACTGCCAG CAGCATAGCT GGGGGAACGG GAATTACCAT CCTGATCATC AACCTGAAGA  
AGAGCTTGGC CTATATCCAC ATCCACAGTT GCCAGAAATT TTTGAGACC AAGTGCTTTA TGGCTTCTT TCCACTGTA  
TGTATTTTTT TTTGTGTGGG AAGACTAAGA TTCTGGGTCC TAATGTAAGT AAGAAGCCCT CTCTCTCTG TCCATGAACA  
CCATCCTTTT CTGTAACCTC TATTACACAG TATAGTGGTT CTGTAAGTTC ACACAGCCCA GGGAGATGCT GGCTGCCAC  
TCCCCTCAAC CCAGGCAAAT TCCTCGGGGT TAAAGTTATC TACTGCAAGT GACGATCTCT GGGTTTTCT GTGCTGTGT  
TTGTGTGTGT GTGTGTGTGT GTGTGTGTGT GTATGTGTCA CTTTAAAAAG ACTGGTCAGA TGGTAGGGAG ATGAAAAAG  
GAGATGCTAT AAGAAAAATA ACTTTTGGGG CGAATACCAA TGTGACTCTT TTTGTTTGT ATTTGTTGCT GTTCAATAGG

AAATTGTAGT GATGATGCTG TTTCTACCA TTCTGGGACT TGGTAGTGCT GTGTCACTCA CAATCTGTGG AGCTGGGGAA  
GAACTCAAAG GAAACAAGGT AGATAGAAGC CCGATATAAA ATCTTGAATG ACAGGTTAAC GAATTGGAGC TTTATTCCTT  
AAAATATGGC CTGGGTTTTT TGAACATTT CTTCAGAAA ATAGTTTCTC CAAGTTTTAT TACTTTGGTT TACAAATCTC  
ACATTTAAAT CACATTTTAT ACCATAAGTA GCACACATTT CATAATATTC CTCTGAATGA GGGTTGGGAT AATAGGACTG  
ATATGTTAGA AATGCCTTAA AGTGTGTGGA GCATGAGAGA TGGATGTACA GAAGGCTTGT GAGGAAACCA CCCAGGTATC  
TGGCCTTGTT TTCTGCCCCA GAACTAGCCG CCTATTCCTG TTTCTGTTTT ATTCTTTGT TTCTTGACTT TTCCTTTCCA  
ACTTGCTCTA AAACCTCAGT TTTCTTCTT TTCTGATTCA TGACTACCAA ATGTTTTAC TTGCTCACC CGTCCATTAC  
ACCTTTGATA AGAACCACCA GACCTTGTGC TCATGTACTT GCCCATGTCT GATGGAAGAA ACATACTCTC TCCATCTGTC  
CACTTTCTG AGGCATTCAA GTCTAGCCAC CTTTAAAAAT CACTCTCTC CAGGCTGGGC ACGGTGTCAC GCCTGTAATC  
TCAGCACTTT GTGAGGCTGA GGAGGGCGGA TCACCTGAAG TCAGGAGTTC AAAACCAGCC TGGCCAAATG GCAAAACCAA  
ATCTTCTTCA ATTATAACCA AATCTTAAAC CAAATCTCTA CTAATAAATA CAACAAAACA AAACAACAAC AAAAAAACA  
GAAAAGGAAA CATTAGCCCA GCGTGGTGGC AGGTACCTGA GGTTCCAGAT ACTTGGGAGG CTGAAGCAGG AGAATCGCTT  
GAGCCCAAGA GATGGAGGTT GCAGTGAGCC GAGATCATGC CACTGCACCA CAGCCAGGGT GACAGAGCCA TACTTCCCAG  
CACATTGGGA GGCCAAAGCT GAAGAATAAT TTGAGGTGAG GATTGGGAGA CCAGCCTGGC CAACATGGTG AAACCTCGTC  
TGTAATAAAA ATATAAACT TAGTGGGGCA TGGGGGCACA CACCTGTAAT TTCAGCTACT TAGGAGGCTG AGGCAGGAGA  
ATTGCTTGAA CCCGGGAGGC GGAAGTTGCA GTGAGCCAAG ATCGTGGCCA CTGCACTCCA GCCTGGGTGA CATAGTGAGA  
TTCTGTCTCA AAAAAAATAA AAGAAATTTA AAAAACTACT CTCTTCCAAA GATAGATAAA TAAGACAGCA GATATACTAA  
GGAATAACCT CACCAACTTG TCATTGACTG ACATGATTTT TTTTGGCCCA CTGGCCAGC TAGTCTGGTT TGGTTTTCTG  
GAAATGAAAG AAATAATCAG AGTTTAATGA CAGAGAGCGT GAGACCCAGA AAGACAAAAG TAGATGAGGT AAGTCTCTTG  
AGCGAGACTT CTAGGGATGG GAAATTTGTG GTGATTGATA TGAAATGATT TTTCCCTTAT CAGGTTCCAG AGGATCGTGT  
TTATGAAGAA TTAACATAT ATTCAGCTAC TTACAGTGAG TTGGAAGACC CAGGGGAAAT GTCTCTCCC ATTGATTTAT  
AAGAATCAG TGTCAGAAC ACTCTGATTC ACAGCCAAGG ATCCAGAAGG CCAAGGTTTT GTTAAGGGGC TACTGGAAAA  
ATTTCTATTC TCTCCACAGC CTGCTGGTTT TACATTAGAT TTATTCGCT GATAAGAATA TTTTGTCTT GCTGCTCTG  
TCCACCTTAA TATGCTCCTT CTATTTGTAG ATATGATAGA CTCCTATTTT TCTTGTITTA TATTATGACC ACACACATCT  
CTGCTGGAAA GTCAACATGT AGTAAGCAAG ATTTAACTGT TTGATTATAA CTGTGCAAT ACAGAAAAAA AGAAGGCTGG  
CTGAAAGTTG AGTTAACTT TGACAGTTG ATAATATTTG GTTCTTAGGG TTTTTTTTTT TTTAGCATT CTTAATAGTT  
ACAGTTGGGC ATGATTTGTA CCATCCACCC ATACCCACAC AGTCACAGTC ACACACACAT ATGTATTACT TACACTATAT  
ATAACTTCTT ATGCAAATAT TTTACCACCA GTCAATAATA CATTTTGGCC AAGACATGAA GTTTTATAAA GATCTGTATA  
ATTGCTGAA TCACCAGCAC ATTCAGTAC ATGATATTAT TTGCAGATTG ACAAGTAGGA AGTGGGGAAC TTTTATTAAG  
TTACTCGTTG TCTGGGGAGG TAAATAGGTT AAAACAGGG AAATTATAAG TGCAGAGATT AACATTTTAC AAATGTTTAG  
TGAAACATTT GTGAAAAAAG AAGACTAAAT TAAGACCTGA GCTGAAATAA AGTGACGTGG AAATGGAAAT AATGGTTATA  
TCTAAACAT GTAGAAAAAG AGTAAGTGGT AGATTTTGTT AACAAATTA AGAATAAAGT TAGACAAGCA ACTGGTTGAC  
TAATACATTA AGCGTTTGAG TCTAAGATGA AAGGAGAACA CTGGTTATGT TGATAGAATG AAAAAAGGG TCGGGCGCGG  
AGGCTCACGC CTGTAATCCC AGCCCTTTGG GAGGCGGAGG TGGGCAGATC ACGAAGTCAG TAGTTTGAGA CCAGCCTGGC  
CAACATAGTG AAACCCGTC TCTACTAAAA ATACAAAAAA AAAATTAGCT GGGTGTGGTG GCAGTCACCT GTAGTCCCAG  
CTACTTGGGA GGATGAGGCA GGAGAATCGC TTGAACCTGG GAGGCGGAGG TTGCAGTGAG CCGAGATCGC ACCAGTGCAC  
TCCAGCCTTG GTGACAATGG GAGACTCCAT CTCAAAAAAA AAAAAAAGATA AAAAGTCAGA AATCTGAAAA  
GTGGAGGAAG AGTACAAATA GACCTAAAT AAGTCTCATT TTTTGGCTTT GATTTTGGGG AGACAAAGGG AAATGCAGCC  
ATAGAGGGCC TGATGACATC CAATACATGA GTTCTGGTAA AGATAAAAT TGATACACGG TTTGGTGTA TTATAAGAGA  
AATCATTATT AAATGAAGCA AGTTAACT CTAAGAGAAT TATTTTGAGA TAGAAGTGAA GCTAAGCTAA ACTTCACATG  
CCTATAATTG GAGGGAAAAA CTAAGGATAA AATCTAGCCT AGAAGATACA ATAATTAGTC ATAAACATGC ATTGTGAAAC  
TGATAGAGAG AGGTAGCCCA AAATAGAGAA AGATTAGATA AAGAGAAAAA AAGTATCCAT CAGAGACAGT ATCTTAGGC  
TTGGGCAAGA GAAAAGTCCA CAGTGATAAG CAACTCCACC TAAGGCATGA ATATGCGGCA GAGAAAACAG CAATAGTGAA  
TGAATGCAAA AGGTGCTGAG CAAATCCAC ACATGAGTAT TGTGCATGAG TAAATGAATA AAACATTTGC AAAGACCTTT  
AGAGAAAGAG AATGGGAGCA TATGTGCGAA ATAAGATAGT TGATTATGAA TAGAAGGTAG TGAAGAAAAG CAAGCTAAGA  
AAAAATTCTG TTTATAAAAG AAGGAAAAGA TAGTTTATGT TTTAGCCTA AGTATAAGAG TCCTACAGAT GGACTGAAAA  
AAATCAGTCT GAGAGTATTA GTCACAATTA ATGAAATAAT TACATTTTAT GTATTGAGGA TGCCAAGATT AAAAGGTGAC  
AGGTAGATGT TAATTTCCCT AGATTGTGAA AGTGATCAG ACAATCACAC AACAATAAT TAAGTGACTT GGTATGCTTT  
ATTTAATTGT AGGGCCTGAG GTTTTCCATT CTCATTTTTC TAAAATACAA TTTTGTCTT CCAAAATTGA CAGCAGAATA  
AAAACCTAC CCTTTCAGT TGTATCATGC TAAGCTGCAT CTCTACTCTT GATCATCTGT AGGTATTAAT CACATCACTT  
CCATGGCATG GATGTTTACA TACAGACTCT TAACCCTGGT TTACCAGGAC CTCTAGGAGT GGATCCAATC TATATCTTTA  
CAGTTGTATA GTATATGATA TCTCTTTTAT TCACTCAAT TTATATTTT ATCATTGACT ACATATTTCT TATACACAAC  
ACACAATTTA TGAATTTTTT CTCAAGATCA TTCTGAGAGT TGCCCCACCC TACCTGCCTT TTATAGTACG CCCACCTCAG  
GCAGACACAG AGCACAATGC TGGGGTTCTC TTCACACTAT CACTGCCCCA AATTGTCTTT CTAATTTTCA ACTTCAATGT  
CATCTTCTCC ATGAAGACCA CTGAATGAAC ACCTTTTCAT CCAGCCTTAA TTTCTTGCTC CATACTACT CTATCCCAG  
ATGCAGTATT GTATCATTAA TTATTAGTGT GCTTGTGACC TCCTATGTA TTCTCAATTA CCGTATTG TGCAATAAAT  
TGGAATAATG TAACTTGATT TCTTATCTGT GTTTGTGTTG GCATGCAAGA TTTAGGTAAT TATCAAGATA ATGGGGAATT  
AAGGCATCAA TAAAATGATG CCAAAGACCA AGAGCAGTTT CTGAAGTCTT CCTTTTCATC AGCTCTTTAT CAAACAGAAC  
ACTCTATAAA CAACCCATAG CCAGAAAACA GGATGTAGGA ACAATCACCA GCACACTCTA TAAACAACCC ATAGCCAGAA

AACAGAATGT AAGGACAATC ACCAGCCATC TTTTGTCAAT AATTGATGGA ATAGAGTTGA AAGGAACTGG AGCATGAGTC  
 ATATTGACC AGTCAGTCCT CACTCTTATT TACTTGCTAT GTAAACTTGA GAAAGCTTTT TTCTCTTTGT GAACCTCAGG  
 TTTTACATCT GAAAATGAGA AATTGGAAC AAAAGATTCC TAACTGGTCT TTCTGTTCCC ATATTCTGTG ATTTTCAAT  
 ATTTAGGATT TTTGGTAATC ACAATTACTT AGTTTGTGGT TGAGATAGCA ACACGAATCA GAACATTTTG GTGGACATAT  
 TTTCAAAGGA GTAGCTCTCC ACTTTGGGTA AAGAAGTGAT GCNGGTCTGT GTGGCTCAGC CCTGTAATCC CAGCATTTA  
 GGGAGGCCAA GCGGGGTGGA TCACGAGGTC AGGAGATCGA GACCATCCTG GCTAACACGG TGAAACCCCG TCTCTACTAA  
 AAAATACAAA AAATTAGCCA GCGGTGGTGG CCGGCGCCTG TAGTCCCACG TACTCGGGAG GCTGAGGCAG GAGAATGGCA  
 TGAACCAGGG AGGCGGAGCT TGCCGTGAGC CGAGATAGCG CCATTCAGT CCTCCTGGG CAAAAGAGCA AGACTGCGTC  
 TCAAAAAA AAAAAGAGAA GTGTGTGGAG TAGCAGGACA CCTGCAACAA TAATATTTT CTAATCCCT  
 CTGAAAAATG CTAATCAAAG GGTTTTTTTC CTAATAATG TCTTAGAAAT AAAATTTCCC CTTTGGGAGA CCGAGGCTGG  
 CAGATACAGA GGTGAGGAGA TAGAGACCAC GGTGAAACCC CGTCTCTACT AAAATACTA AAAATTAGCC GGGNGTGGT  
 GGTGGGTACA CCTGTAGTCC CAGCTACTTG GAGGTGAGG CTGGAGAATC ACGTGAAC GCCACGTGCT GCTGGGTCTC  
 AGTCCTCCAC TTCCCGTGT CTCTGGAAGT TGTGAGGAGC AATGTTGCGC TTGTACGTGT TGGTAATGGG AGTTTCTGCC  
 TTCACCTTC AGCCTGCGGC ACACACAGGG GCTGCCAGAA GCTGCGGGT TCGTGGGAGG CATTACAAGC GGGAGTTAG  
 GCTGGAAGGG GAGCCTGTAG CCTGAGGTG CCCCAGGTG CCTACTGGT TGTGGGCCTG TGTAGCCCC CGCATCAACC  
 TGACGTGCA TAAAAATGAC TCTGCTAGGA CGGTCCCAGG AGAAGAAGAG ACACGGATGT GGGCCAGGA CGGTGCTCTG  
 TGGCTTCTGC CAGCCTTGCA GGAGACTCT GGCACCTACG TCTGCACTAC TAGAAATGCT TCTTACTGTG ACAAATGTC  
 CATTGAGCTC AGAGTTTTTG AGAATACAGA TGCTTTCCTG CCGTTCATCT CATACCCGCA AATTITAACC TTGTCAACCT  
 CTGGGTATT AGTATGCCCT GACCTGAGTG AATTCACCCG TGACAAAAC GACGTGAAGA TTCAATGGTA CAAGGATTCT  
 CTCTTTTGG ATAAAGACAA TGAGAAATTT CTAAGTGTGA GGGGGACCAC TCACTTACTC GTACACGATG TGGCCCTGGA  
 AGATGCTGGC TATTACCGCT GTGCTGAC ATTTGCCAT GAAGGCCAGC AATACAACAT CACTAGGAGT ATTGAGCTAC  
 GCATCAAGAA AAAAAAGAA GAGACCATTG CTGTGATCAT TTCCCCCTC AAGACCATAT CAGCTTCTCT GGGGTCAAGA  
 CTGACATCC CGTGAAGGT GTTCTGGA ACCGGCACAC CCTTAACCAC CATGCTGTGG TGGACGGCCA ATGACACCCA  
 CATAGAGAGC GCCTACCCGG GAGGCCCGT GACCGAGGGG CCACGCCAGG AATATTCAGA AAATAATGAG AACTACATTG  
 AAGTGCCATT GATTTTGTAT CCTGTACAA GAGAGGATT GCACATGGAT TTAAATGTG TTGTCCATAA TACCCTGAGT  
 TTTAGACAC TACGACCAC AGTCAAGGAA GCCTCTCCA CGTCTCTCTG GGGCATTGTG CTGGCCCCAC TTTACTGGC  
 CTCTTGGT TTGGGGGAA TATGGATGCA CAGACGTGC AAACACAGAA CTGGAAGC AGATGGTCTG ACTGTGCTAT  
 GGCCTCATCA TCAAGACTTT CAATCTATC CCAAGTGAAA TAAATGGAAT GAAATAATTC AAACACAAAA AAAAAA  
 AAAAAA GCGGAGCCG ACTCGGAGCG CGCGCGCGG CCGGGAGGAG CCGAGCGCGC CGGGCGCGC GTGGGGCGC  
 CGGCTGCCCC GCGCGCCAG GGAGCGGAG GAATGTGACA ATCGCGCGC CGCACCTAG CACTCTCGC TCGGCTCTA  
 GGGCTCTCGC CCTCTGAGCT GAGCCGGGT CCGCCCGGC TGGATCCCA TCACCCTCCA CGGCCGTCCG TCCAGGTAGA  
 CGCACCTCT GAAGATGGTG ACTCCCTCT GAGAAGCTGG ACCCTTGGT AAAAGACAAG GCCTTCTCCA AGAAGAATAT  
 GAAAGTGTA CTCAGACTTA TTTGTTTCAT AGCTCTACTG ATTTCTCTC TGGAGGCTGA TAAATGCAAG GAACGTGAAG  
 AAAAAATAAT TTAGTGTA TCTGCAATG AAATTGATGT TCGTCCCTGT CCTCTTAACC CAAATGAACA CAAAGGCACT  
 ATAACTTGGT ATAAAGATGA CAGCAAGACA CCTGTATCTA CAGAACAAGC CTCCAGGATT CATCAACACA AAGAGAACT  
 TTGGTTTGT CTGCTAAGG TGGAGGATTG AGGACATTAC TATTGCGTGG TAAGAAATTC ATCTTACTGC CTCAGAATTA  
 AAATAAGTGC AAAATTTGTG GAGAATGAGC CTAATTATG TTATAATGCA CAAGCCATAT TTAAGCAGAA ACTACCCGT  
 GCAGGAGACG GAGGACTTGT GTGCCCTTAT ATGGAGTTT TAAAAATGA AAATAATGAG TTACCTAAAT TACAGTGGA  
 TAAGGATTGC AAACCTCTAC TTCTTGACAA TATACACTTT AGTGGAGTCA AAGATAGGCT CATCGTGATG AATGTGGCTG  
 AAAAGCATAG AGGGAACCT ACTTGTCATG CATCTACAC ATACTGGGC AAGCAATATC CTATTACCCG GGTAAATGAA  
 TTTATTACTC TAGAGGAAAA CAAACCCACA AGGCTGTGA TTGTGAGCCC AGCTAATGAG ACAATGGAAG TAGACTTGGG  
 ATCCAGATA CAATTGATCT GTAATGTCAC CGGCCAGTTG AGTGACATTG CTTACTGGAA GTGGAATGGG TCAGTAATTG  
 ATGAAGATGA CCCAGTGCTA GGGGAAGACT ATTACAGTGT GGAATCTCT GCAACAAAA GAAGGAGTAC CCTCATCACA  
 GTGCTTAATA TATCGGAAAT TGAAAGTAGA TTTTATAAAC ATCCATTTAC CTGTTTTGCC AAGAATACAC ATGGTATAGA  
 TGCAGCATAT ATCCAGTTAA TATATCCAGT CACTAATTT CAGAAGCACA TGATTGGTAT ATGTGTCACG TTGACAGTCA  
 TAATTGTGT TTCTGTTTC ATCTATAAAA TCTCAAGAT TGACATTGTG CTTTGGTACA GGGATTCTG CTATGATTTT  
 CTCCCAATAA AAGCTTCAGA TGGAAGACC TATGACGCAT ATATACTGTA TCCAAAGACT GTTGGGGAAG GGTCTACCTC  
 TGAATGTGAT ATTTTGTGT TTAAGTCTT GCCTGAGGTC TTGAAAAAC AGTGTGGATA TAAGCTGTTT ATTTATGGAA  
 GGGATGACTA CGTTGGGGAA GACATTGTTG AGGTCATTAA TGAAAAACGTA AAGAAAAGCA GAAGACTGAT TATCATTTTA  
 GTCAGAGAAA CATCAGGCT CAGCTGGCTG GGTGTTTCAT CTGAAGAGCA AATAGCCATG TATAATGCTC TTGTCAGGA  
 TGGAAATAAA GTTGTCTGCT TTGAGCTGGA GAAAAATCAA GACTATGAGA AAATGCCAGA ATCGATTAAA TTCATTAAGC  
 AGAAACATGG GGCTATCCGC TGGTCAGGGG ACTTTACACA GGGACCACAG TCTGCAAGA CAAGGTTCTG GAAGAATGTC  
 AGGTACCACA TGCCAGTCCA GCGACGGTCA CCTCATCTA AACACCAGTT ACTGTACCA GCCACTAAGG AGAACTGCA  
 AAGAGAGGCT CACGTGCTC TCGGTAGCA TGGAGAAGTT GCCAAGAGTT CTTAGGTGC CTCTGTCTT ATGGCGTTGC  
 AGGCCAGGTT ATGCTCATG CTGACTTGCA GAGTTCATGG AATGTAATA TATCATCTT TATCCCTGAG GTCACCAGGA  
 ATCAGG-3' (SEQ.ID NO:2409)

### Human Enzyme-related Antisense Polynucleotide

5'-CTT GCT CCT GGG GGC CTC CTG GTC CCT CTG GCT G TT CCC GGC CCT GGB CTG GGG CBG GGG CCG CGT BGG CGC

GGC TCG CCB GGB CGG GCB GCG CCB GCB GCB GCB GGC TCB GCB TCC TGG CCB CGG BBT TCC GGT GTG CGG GGC  
CTG GTG CC CCT GGG CCT CGG GTG CTG CCT GT GCG CTG CCT TCT TCT CCT GG GTC CTC GCC GGG-GCC CTT GCT  
GCC CTG GCT GT GCC CTG GGG GTC TGG GTT CGG CTG T CCC CBG CBG GBC CBG TCC CBT CCB CBG CGT GTG BTG  
BGT BGC CBT TCT CCT GCB GCC GBG GGG CGC GGG CGB GCB TCG C TTT GGG CTT TTC TCC TTT GGT T TGB GCG CCB  
GGB CGC GCG BCB GCB GCB GGG CGC GGG CGB GCB TCG CBG CGG CGG GCB GGG GGGCTCCGCG CGCGBGBGGT  
TBTGGGCTCC CBGGBCBCC CGCBCCGCGC GGBCGTTTBC BTTCGCCBCG CBGTGCGCGG CCBGCBTGBG GBBGTTGGGG  
GCBBTCBGGG TGGCGCCGCB GBBGTGGCCT CCGCGCBGCT GCBGGGBCBG CBTGGBGGGG CBGCGGTGGG GCCGCGCTCG  
CCGGCCCCC BCBTCTCCG BGGCCBGGC GGTGCCCCC BGCGBGBGG CCGGCBGGBC BCBGGCGBGG BGBCBGCGGB  
GTGCGGGCC GBBGGTCTBG GTGGGGCTGG GGCTCGGGG TCTCTGCCCC TCCGTGCTGG TGGGGCTGGG GCTCCGGGG  
TCTCTGCCCC TCCGTGCCCG GTGGGGCCCG GCTCGCCGGC CCCCCCTGC CCGGTGGGGT CCGCGCGCGC GCCGGCCTGC  
CGGCCCTCG TGGTCTCTG TGGCCGGGTC CCGGTCCCG GGGTGGGGCG GGBGTGGGG GCCGBGGGTC CCCTCCCBT  
CTGCTCTGBC CTGCTGGBCT CTGGBTCTGB BGBTCCGCB TGTGGGGCG GGBGTGGGG CTGCTCTCCC GGCCTCCGCT  
GBTCTCCCT GCCTCBGCCC CBGTGGGTBG GGBBBGGGC BGCGBBGGCB GGBGTGGCTG CBTCTTCTCT GGTGGGCTCT  
GCTCTCCCG CCTCCGTGTG TTGCTGGGTG TTTTCCGTC TCTGGTCTG CTTCCGGGGT CGT CCGGGGCTGC  
BGCBBCTCB TCBGCTCTG CCTGGGTGG CTBGCCTGG GCCTGCBGG CCBCCBGGBG BBTGGCBGB BGGBTGGCB  
GGGTCTCTBT GGCTGGGGTC BCBGTCTCT TBGCTBGGCB GGTGBCCBG BGGGGC GGG TCC TCB TGG CTG GGG GCC  
TGG GCC TGC BGG GCC GCT CTT GCC TGG BGT GGC TC GCC CBG BGT CTT CCC TGG T CGCTGCBTC TGCTCCGGGG  
CTGCBGCBBC CTBCTCBGCTC TTGCTGGBGTG GCTCBGCTGG GCCTGCBGG CCBCCBGGBG BTGGCBGCBG  
GBTGGCBGGG TCCTCBTGGG TGGGGTCCCT GGBGGBGGG GBCBGGGGG TCCTCBTGGG TGGGGTCCCT CTCCCGTC  
CT CGG TTT CCT TTG CGG TC TTG GCC CGG GCT CCG GGT G CCC GCC CGC CCG GCC GCC GC CCC GCC CGG CTG  
TCC CCG CCC CGC CCC GGC CCG GGG CGC GGG GG CGG CCC TCC CGC CCC TCT GG GCC GGC GCG GGC GTC GG CCG  
CTC GCG CCT GGG GTT CCC TCT CCT CCC CCT GTG C GCC TGC CTC TTG CTC TTCTGC GTC CGC TGC CTT CTC CC CTC  
TCC TCG GCC GTT GCC TGT GC TGT CCG TCC TGT CGC CCT TCC GTG GTG C TGT TGT CTC TTC TGC CCT C GGT GTG  
CTG GTG CTG GTG GTG CCT GTG CCC GTG CTC GCCCTG CCT GGG CTG GCC TCT TCG GGT GTG GCT TTG GGG CTC  
TCT TGG TTG CCC TTT CTT CTC GTG GTG CCT CTC CCT GGT TTG GTC GT TGT CTC GGG TGG TGC TCC TCT CCC  
TTT CCC TGC TGG CCG TTT GT CCT GTT TTC TGT CTT CCT CT TTC CTC CTG TTT CTC CGT TTG GCT TGC TGC TTG CCG  
GGC TGT CTC C CTT GCC CCT GTG GGC TTT CCC TGG TCC GGT CTT CTC CTT GGG GGT C GCC CTT CTT GGT GGG  
CTGGCT CGT CTG TCT TTT TCC TTC C TGG GGG TGG CCG TTG TGG GCG GTG TGG TCC GCC T TGC CTC TGC TGG TCT  
TTC CTCGGTBGC GCGCTCBBC TCGGGTGGG CGGTGGTGBG CGGCGGCBBC CCGGBBGGC CCTGCGCGCC  
GBGTCBGGCTG BCGGBBGGG TBGGCTTGB GCBGBCTCC CBGGBGGGTG BCBGCBGCCB BTGBGCTBC CTCGCTCTC  
BTGGTBCCGT CGGTGTGGT GCBGCGGGCTG TGTGTBBGG CGBGCTGGG CCGTCTGCT GTCCTGCTG CCGCTCTGTC  
CTTCA TGG TA CCGTGGGTG GTGGCCCTG GGTGGGGCGG TGGTGGGGCG CGCGCGCTCG CGTGGCTCCG GCTCTCTTT  
CCCGCTCCGT CCGCCCGGGG GCCTTGGTCT CCCTCGTCT TCBTGGTBCC G BCCGGCGGBG CCGCBGGGT  
GGBCTGGGBG TGGGTTCCTC CCGCCGCTC TCBCCBCCG CGCTGBCGTC BCGCCTBBG BCTGCTGTT CTGGBGCTCC  
TTGGCBGGCC BCBBCBGBG GBGBGBBBT CBTGBGCBBC TBTCCBTTC TGBBBBBBBG GGBTCBBBBB CTCCCGTTC  
CCGTTCCGC TGGCGCGCGC TCGGGGTTCC TCGTGGGTTT CTCCCGCGG TTCTCCGGT TGTGCTTT GTGGGCTTCT  
TGTCTTTTG GCTGTTCTT TCCTGCTGG CGTCTTTTC TTCTTTTG CTGCTGTTG TCTGCTGG TCCTTTGCC  
TGTGTGTTT TGCTGCCGT TCGCCTGGCG CGCGCTGCG GTTCTCTGT GGTTCCTCC CGCCGTCTC CGGTCTGTTG  
CCTTTGTTG CTTCTGTCT TTTTGGCTGT TCTTTCTG CTGCGCTCT TTCTCTTCT TTGTGCTCG TTGTGGGTCC  
GCTGGTCTT TGCCCTGTGT GTTCTGTCT GGBGCTGCTB CTGCBGATTT CBGBGGGBG BBCCCTGCTB CTBCCBGT  
TCBGTCTG BCBGBBGBG BBBBGBGCBG BGGGGGBGB GBBGBBGBG CBTCTCCCB GBGBGGCTGC CTBGBCBBT  
GCTGTTTTC CTTCCBGT TGGGTTTB TBBCTCCCB BBGGCBGBG BGGGGCBGG CGTTCCTTC TCTCGTGGT  
TTCTCTTTC TGGCAGTGG TGGGGGTGG GGTGGGGTGG CTCTCTGT CTTGGGGT TCTCTGCT CTGGGCTTT  
CTCCCTTTT CTTCTCTG TGTTCCTG GGGCTCTCT CTGCTCTGT GTCCTTGCC TGGCCCTCT CCCTCTCTG  
TCTCTGTC CTGTGTTCC CCGTCTTC CTCTCTGAC CTCTTTTCC TCCGCTGGG GGGGCCCTG CTGTTCTCTG  
CTCCCTGGCT TGGGGTTCT TCTGTGTG TTTCTCTCT GTTGGCTGG TTTCTCTTC TTTGTCTTC CTGGGTGCC  
CTTCTCTCT TCTTGGGTCC TTGGTGCTG GGCTGGG GCGTCTGGG GTGCBGGGC CBTCTGCTG CGCCTGGCG  
CTGCTGTGCG TCCGTCTGT GGGGGGCCG GGTGCTGGG CCCTGCTGG CCGACGACC CCGGCCGACC CGAGGCTCG  
GGGGCTGTG TCTGGCGTG GTGGGCTTG GGGCTCTG GGGCTGGT TCTGCTGCG CCGTGGGCTG GCGTCTTG  
GGTGGGGG CCGGGGGCG GGGGGCCGT GTTCTGGG CTGGGGGTG CTGTGGCTG CGTTGCCCC CGTTGGTGGC  
GCCGTCTG TCGCGTCTG TGGTGGGT CCCCCGCCG TTTCTGGG TCCGCTGGG GTGCTCCGT TCTCGTGCC  
GCTGCTGCT TGTCTTCCG GCCGTGGCG CGTGGTGTG CCGCCCCCT GGCCTCTG TCGGGGTCTG GCTGGTGGC  
GGTGCCCTG CGGCGGTCT TCTCTCTGT GGCTTGGG CCGGCCGTC TCGGGCTCT CGTGTCTGT CTTGTGCTGT  
TCGGGCGCT CTTCTCTT CCGCGCGCG CGCTCCCGC CCGCTGCTG CCTGGCCG GCCTCTCT GGCGCTGT  
TCGGGCGCG GCCTTGGCG TCCGTTTGG GCTGCTCTG GCGTTCGCG CCTCGGCT GGGCGCTCT TCCGCTGT  
GCTGGTGGC CTGTTGGG CCTCTGGC TCCGGTGTG TGTGGTCCC CCGCTGGT CCGGGCGGT TGGCGGGG  
TGGGCGCGG CGGGTCTCC GGGTGGCT TCTCGCGG GGGTCCCG CTCTGCTGT TCCCTGGGT CTTCTGCTC  
TCTCTGGG GGTGCTGG TCGCGGGG TCCGGGCTG CCGCGGCTG CTGGGCTTC TCGGTCTG GGGTGTCTG  
TGGCCCCCT CGTGTGCCC TCCGTGCCC GTGCGCGCC TCGTCCCTC CTGGGTGCG GCGGGCTG TCTGGCGTT  
TTGCTCTCT CTGGGCTCT TGGGTGCBG GGCCBCTCT GCTGCGCTG GCGCTGCTG TCGTCCGTC TGCTGGGGG  
CCGGGTGGG TGGGCGCTG TGGCGCACG ACCCGGGCC GACCCGAGG TGGGGGGCT GTGTTCTGG GCTGGTGGG  
TTGGGCCCC CTGGGGCTG GTTCTCTG TGGGCTGG GCGTCTGCTG TGGGGTGG GGGCGGGG GCGGGGGG  
CGCTGTCTG GGGCTGGG GTGCTGTG CTGCGGTTG CCGGTTCTG TCGCGCTGT GCCTGTCT TCCGGCGTG  
GGTCCCCCG CCGTTTCT GGGTCCCG TGGGTGCTC CGGTCTCTG TCGCGCTGT GCCTGTCT TCCGGCGTG  
GCGGCTGT GGTCCGCCCC CCTGCGCT CTGCTCGGG TCTGGCTGT TCGCGGTGCT CTGGCGCG GTCTCTCT  
TGTGGCTCT GGGCGGGG GGTCTCGGG GTCTGCTGT CGCTCTGT CTGTTCCGG CGCTCTCT TCTCCGCG  
CCGCGCTCC CCGCGGCTC GTGCGCTG CCGGCGCT TCTGGGCG TGTCTGGG GCGGCGCTG GCGCTCGT  
TGGGGTGC TCTGGGCTT CCGGCGCT GCTGGGCG TCTCTCCG CTGCTGGT GCGGCTCTG GCGGCTCT  
GGCTCCGCT GCTCTGTGT CCCCCGCT GTGGCGGG CCGTGGGG GCGTGGGG CCGGCGGG CTCCGGGCT



CCCTCTCCG CCGGGGGTCC CGCGCTCTG CTGTTCCCTG GGCTCTTCTG CCTCTCTCTT GGGTGGGTGC TGGGTGCCGG  
GGTCTCCGGG CTGCCCCGC GCTGCTGGGC GTTCTGCGGT CTGGGGGTG TCTGTGGCCC CGCTCGTGC GCCCTCCGTC  
GCCCCGCGCC GGCCTCGTCC CCTCTGGGT GCGCGGGGG CTGGTCTGG CGTTTTGCTC CTCTCTGG CTGCCCCBGT  
TTTTGBTCCT CBCBTGCCGT GGGGBGGBCB BTGGCTGCTT CCCCCGGGT TCTGCTGCTT GCTGCTTCTT TCCCGTCTCC  
CTTCTTTCCC GTCTCTTTT TGCTCTTTG GGTCTCTGT GTTCTGCGC TGCTGTGGT GCGCTTGTGC GTTCTCTCTC  
TCTTCTCTG GGTCTCCGT TCTGCTCTG CCTTTCTCTG TCTGTGCGC GCGGTCTCTC CTCCGGCGTC CTCTGCCCT  
GTGCTGTTT CCTCGGGTGG TCGGGGTCC GGTGCTCCCC CGGCGGGGG GCTGGTGGC TGGGCTGTG TGGTGGGGT  
TGGGCGCGCT GGGTTGGGG TGTGGTGGG CTCTGTGTG CTGTGGGGG TGTGTGGGCT TGTGTGGGCT TGTGTGGGCT  
CTTGGGGCTT CCTCCCTGT GCTGGGTGCG GCTCCCCG CCCCCTCTG GCGCGGTGGC CTGGCTCTT GTGGCGCTT  
CTGGCTCTG CCTGTCTT CTTCGCTCG TGGCTGCTG GCTGC GCGCGCGCG CCAAGATGGC GGACCTGGAG  
GCGGTGCTGG CCGACGTGAG CTACCTGATG GCGATGGAGA AGAGCAAGGC CACGCCGGC GCGCGCGCA GCAAGAAGAT  
ACTGCTGCCC GAGCCAGCA TCCGCACTGT CATGCAGAAG TACCTGGAGG ACCGGGGCGA GGTGACCTT GAGAAGATCT  
TTTCCAGAA CTGGGGTAC CTGCTCTTCC GAGACTCTG CCGTAACCA CTGGAGGAGG CCAGGCCCTT GGTGGAATTC  
TATGAGGAGA TCAAGAAATA CGAGAAGCTG GAGACGCTGT AGGAGCGTGT GCGCGGAGC CGGAGATCT TCGACTATA  
CATCATGAAG GAGCTGCTGG CTGCTCGCA TCCCTTCTG AAGAGTGCCA CTGAGCATGT CCAAGGCCAC CTGGGAAAGA  
AGCAGGTGCC TCCGATCTC TTCCAGCCAT ACATCGAAGA GATTTGTCAA AACCTCCGAG GGGACGTGTT CCAGAAATTC  
ATTGAGAGCG ATAAGTTAC ACGTTTTG CAGTGAAGA ATGTGGAGCT CAACATCCAC CTGACCATGA ATGACTTCAG  
CGTGATCGC ATCATTGGG CCGGGGGCTT TGGCGAGGT TATGGGTGCC GGAAGGTGA CACAGGCAAG ATGTACGCCA  
TGAAGTGCTT GGACAAAAA GCGATCAAGA TGAAGCAGG GGAGACCTG GCCCTGAAG AGCGCATCAT GCTCTCGCTC  
GTCAGCACTG GGGACTGCC ATTCAATTG TGCATGCTAT ACGGTTTCCA CACGCCAGC AAGCTCAGCT CATCTCTGGA  
CCTCATGAAC GGTGGGGACC TGCACTACCA CCTCTCCAG CACGGGGTCT TCTCAGAGG TGACATGCGC TTCTATGCCG  
CCGAGATCAT CTGGGCTG GAGCAGTGC ACAACCGCTT CGTGGTCTAC CGGGACCTGA AGCCAGCCAA CATCTCTG  
GACGAGCATG GCCACGTGCG GATCTCGGAC CTGGGCTGG CTGTGACTT CTCAAGAAG AAGCCCCATG CCAGCGTGG  
CACCCACGG TACATGGCTC CGGAGGTCT GCAGAAAGG GTGGCTACG ACAGCAGTGC CGACTGGTTC TCTCTGGGT  
GCATGCTCTT CAAGTTGCTG CGGGGGCACA GCGCTTCCG GCAGCACAAG ACCAAAGACA AGCATGAGAT CGACCGCATG  
ACGCTGACGA TGGCGTGGG GCTGCCGAC TCCTTCTCC CTGAAGTACG CTCCCTGCTG GAGGGGTGCT TGCAGAGGGA  
TGTCAACCG AGATTGGGT CTCTGGGGC AGGGGCTCAG GAGGTGAAG AGAGCCCTT TTTCCGCTCC CTGAGTGGC  
AGATGGTCTT CTGCAAGAAG TACCCTCCC CGCTGATCCC CCCACGAGG GAGGTGAAG CGGCCGACG CTTCGACATT  
GGCTCTCTG ATGAGGAGGA CACAAAAGGA ATCAAGTTAC TGGACAGTGA TCAGGAGCTC TACCGCACT TCCCCCTAC  
CATCTCGGAG CGGTGGCAGC AGGAGGTGGC AGAGACTGTC TTCGACACCA TCAACGCTGA GACAGACCGG CTGGAGGCTC  
GCAAGAAAGC CAAGAACAAG CAGCTGGGC ATGAGGAAGA CTACGCCCTG GGCAAGGACT GCATCATGCA TGGTACATG  
TCCAAGATG GCAACCCCTT CTGACCCAG TGGCAGCGG GGTACTTCTA CTGTTCCCTC AACCGCTCG AGTGGCGGGG  
CGAGGGCGAG GCGCCGAGA GCTGTGAC CATGGAGGAG ATCCAGTCCG TGGAGGAGC ACAGATCAAG GAGCGCAAGT  
GCTGCTCTT CAAGATCCG GGTGGGAAAC AGTTCATTT GCAGTGCGAT AGCGACCTG AGCTGGTGCA GTGGAAGAAG  
GAGTGGCGC ACGCTACCG CGAGGCCAG CAGTGGTG AGCGGGTGC CAAGATGAAG AACAAGCCG GCTCGCCCGT  
GGTGGAGCT AGCAAGGTG CGTGGTCCA GCGCGGAGT GCAACGCGC TCTGACCGC CCACCGCTT CCAGGAAGCT  
ACCTGGAGGA GGTGAGTCT AGCGGATGAG TAGGAGTTG CCACGGAGGA AGGTACACAG AAGGGCTTCC AGGCCAGGA  
AACGAGAG GCACAGAAGT GAGAATGGT GGTGAGTTG GTGGGAAAC TCCAGTGCA GAGGATGGTA  
GCGAAACAAA CTGGAGCATT AAGGTCAAAG TCCTCAAAGA TCTGACTTG CAGATTAAG AGTTTGTTC ACTAATCTG  
TTTGGGCAGA GTGTGGTG TCTAGAGAC CCTCTAGGT CTCTCTCTC AGTAGCCCA GAAGGCTGG CAGTGTCTT  
CTGGGTGCA AGCAGGAGT GACTCCATCA GATCTAGATT TGGGAAAAGC ATCCCTGGT AGGGCTGCA TCAGGGCAGT  
GGCTGGCCAT GAGGACCTG AGAAGTAGAC AGATTACCG AGATTCTCAG GAGGCCAGC AGGAGACTAT GGTGACAAAT  
TAGATTAGAG AAGGGGAGAG AATGAAGGAG CAGTTGGGT AAAAGAAAAC TGAGGCTGAC ATGGGTATAT GGTGGCGAG  
TGACTACCA CCACTGAGA GGAGAACCTC ACAAGCTCTG ACATGCTCTG GTTCCAGTT CTGTTGGGGC TGATCAAGA  
TGGTAGCTA GAGGTGACA GAGATGGGG CCTGTCTT CAAAAGGATG CTGGCTGCTG GCGGAGAGA GGTCTAGAG  
ATTTGAGCTT TATGTGCCA GGGCTGGGAG GAGGGTCTG TCACTTTGAA AGCAAAGAGA GCTCTAGAG AGGGCATGT  
TGAGATAGGA ATGCTGCTT GAGACACCTG GCTTTCCCA CTCTGGGTG CTCTCAGCAG GGTGGGTTT CCTGCCAGG  
CAGCACTGAA CCTCTGTGCG CTTCGGCTG GGAGAGTTT TACCGTAACT ACATGTGAA CCATCTGAA GGAACATCTG  
GATGGGATGG GGTACAGGA AGGGAGCTG CAAGAGTGT GGCACGGAC CTGGGTCTAT GAGCTGGTTG GGGGTGGGG  
TTGGGTGCA GGTACTTGT CTGAGTGGG CCTCTGCGG CCAGGATGG TTCTAGAGTA GGAGGGGTG GATCGGGGAT  
GGGGGAAGC TGAAGTGC CTGCAAGT GAGTCCAG GTTCTGGTG ACCTACTAAG GATTCTGGT CCAGTGTGG  
TCCCAGTTA GACGTCTAG TCCTGAGTCC GTGTCCAGG TTCTGGGTG TGAGTCTAGG ACAGTGTCT GAGTTGACA  
GTCCAATCTA GGTCTGATC CTGACCCAA GTCTAGATT CAGGGTCTG GTAGTAGCT AGGGTCAGAA TCAAGGTTG  
GGTCAGTAAC CAGGATGGGA TCGAGGTCT GGTCCAAAT CTGGATCTG GGACCTGTT GGGGTCTGAG GTGAGTGTG  
CAGTCTGGT ATGGCGTTG AGACCCAGG CTGTGATCT AGGTCTAGT TAGAGTCTCA GGTGGTGGG CAAGGTTGA  
GTCTGGGGT CTGTTTGGAG TCTGGTGTCA GGTCTGGAC TGGCTCAAAG GTCAGGAGT CCGGGGTTAT AGCCAGGGT  
TGAGATGAAA GTCCAGATG GTGTTAGAG CTGTGAATCT GTGTCTGTG GAGCGTCCG GTTCCCTGT ATCAGTTT  
GTGTAGGGG TCGGGCCGA CTGGGGAGC TGGATCCAG AGATGTGACC CGAGGTTGT GTCAGAGAAG GGTCTCGG  
TGTCTCTG GCGGGTCCC TGTCTGTT CAGGCCGGG TCTCGTCCA GCATCGAGG CCGAGGTAC GGCCAGGGT  
TGAGCCCGG GTGCGAGGT TGGTTCGGG TCAGATTCCG CCGGCTCC AGGGGGCGG GTCGCGCGG GGTCTCGG  
CTCGCGGCT CGCTGGCTT GTGCGCGGCA GCGGGGGCG GAGGCGCGG CGGCTCGGG GCGCGGGG GGGCGCGG  
GGCGGGCG CCCCAGTGC AGTCCCGG GAGCGGAG GCGAAGCGG GGGCGGGG CCGAGCCGG GGCATGGGG  
GGCGCGCT GTGAGCGG GCGAGCGG CCGGGGGC GAGCAGGG CAGGCGGG GCTCGGCGG CAGGCGGAG  
CGAGCGCG CCGGGCGG CCGAGCGG AGCAGGAG AGCGGGG GCGGGCGG GCGGGCGG GCGGGGAG  
AGGAGCGG GCGGCAAGA TGGCGGACCT GGAGCGGTG CTGGCCGAG TGAGTACTT GATGGCATG GAGAAGAGA  
AGGCCAGG GCGCGCGG GCGAGCAAGA AGATACTGT GCGGAGGAG AGGTGAGGAG AAGCT TCCAGTTAA  
TACATAATCA ATATGCAAT TATTAATACA TCTCTCATG TCACTCCCC CTGTATCTT CCATTCTTGA CTGCAATTC  
CATCTCTT ACCTTCCCTA GAGGCCAAT CATTTCTT GAAAAACCTG GATTTCCCA GAAAAAAG TGAAGGGCTG  
GGAGCTGTC GTTGTCTGA TTTGCTCCT CTGCCCTG TCCAAATGT GGTGGAAG AAGCACTATT GAAAAATCC



TAAACGCACC CCTGCAGGGT TGGCTCTACC CTGTAGCCAT GGACACATGC TGTGATACC ACCTGCCTCA TGAGTCTCAC  
ATAATTTGCC CTTTCACACT ATCTACCCCA TCAGCCTTAC CAAAACCATA CCTGCATCCT GGGCAGCATC-TGCCCTTCAA  
GAGACTAAGG AATCTCCTTG CAACCAAGAA TGA CTAGACC AATGAGACAC CTTTAAAGGC CCCAGCACAA TATAGAAATC  
CCACAATATG GTAATCCCAG TAAGGAGCTA TCAAGCCATT GCAGGACCAT CTAGAATACA ACTAGAGTAT AGTTCCTTTC  
AATCCAGGAA CTATACTCTA ACAGCTTGGC TCACAGGAAC CAGAAGTGAA GATGATGAGG ATCAGGGGCTG AGCCTGTGAG  
CACCAGCTCC ACCACTGACA CCAACCACAG ATTAACAAG CATCTTGTGG ACCCCTGGGA TGGAAAGAAT AGTTGTGTGCC  
TTATCAACCT CCCCCACAGC CCACACAGAA AAGATAAAAT CATCATGGCT ACAGTGTTAC AGAAGATGAT GACCCAAGGA  
GTAGGCCTGC CTGAGTGAAT GCTGAGAGTG ATAATGGGAG CAGTAGCATC TCAGAGACTA CAGCAGAAAC CATCCACATA  
AAGAGCTTTG CCAAACTTA TGATAAAGGG CACCCTCAGA GACTCTCCCT ACTTTAATAT TAGCCCATTG CAGAAATGGT  
GAGTGGAAG AGAAATCTTA GGAAGAACCC CTTAAAAAAG CAAAATGCTT TTTAGGTTTG TGCTGAAGAG CCTGGAAAAG  
AAATAAGGAC ACACACGCTG AGAAATCTTC CTCCTGCCCC AACACTGGGA TAATCTCCAA GGATCTCTCC ATATCTCATT  
CTCCTGGATA CACTGTCCAC TCAGAAATAT TGTGCAGATG GCATGAATTC AAAAGTGAGC TATTGTGTTA GGAGTGAAGG  
CAAGAGTATC GTAAATATAA TCAAAATTGA AATGAATCTT CTAAATTTGC TTTATAGATG TTTAATGTAA GGCAGCAGCT  
ATTAACGAT AAACCTTAAA TTCGAGAAAA ACTTGGTCAT TCAGAACTA TAGAAACAGG CAGGACTTAT TGCGAGGGCA  
AACACAGAGT GAGCTCCAGC CTGCTTCAGG AAAATCTGCC AGTGCCATGA AGGATGTACT CTGTCTGCTC CACTGCACTA  
CTGCTCAGTA TGAGCCCATG CCATCAGCTG TCCTGACCC ACAGGAGTTC TTAGAAGAG ACTGGTCAAC AAAAGTTTCT  
AGGGTGTTTT ATACCTGCCA ACTCGAGGGT TAAAAACAAGT TGCATAGAAA TGCTCAATCA AGAAAGACAC AGTCATTACT  
CAGAGAATAA TAAACAGCCT GGCAGCACAT GAATGAATAG AAAAAAGATG TTACATGCAA AGCATGAAAT AACCAAAATC  
CATAACAGAT GTTAATCTGT AATGTGTTA GGAGAATTTA GAGGAAGTAT AAGATTATT CTTTCATCAA AAAAATTATA  
GCCAATGAGG ATATATCTAT CAATTATCCA TCAAGTGGTG ATATGGCAGC ACAAGGTAAA ACACAAAGGA ATAAACCAA  
CGTTTATTA GAACCAATCA TGTGGCATT CACATTGAGC ATCATATTTA ATTCTGAAAA AAATCCTTGT ACTGTATCAT  
TCTTCATATT TTATGGATGC AGTAACTAAG GCTGAGAACT TAAAAATTT TCCTAAGTTC AGACACATAG CTAAGTGCCA  
GAACCAAGAT TCAAACTCAC CCCATCTAAC TGCAGAGCAA ACTGCATGCC TTAATGTCA AAGTGAATAC TAGCAGAGT  
AATACAATGT TTGAAAATC AGAGAAGGAA TGATCCCTCT GCATTATAGT TACTAAGGAA TCATTGCCAT TATTTAAATG  
CCAGTGCTTC TACATCAGGC CCAAAATTTT TGCTCTACT ACTGTGAATC AAGACTTGAT TCAACCTCTA CTTGAGTATC  
TGCCGCAATG AGAAATCACT TACCTCCACT AACCCACAT TTTATTTATA ACAACAGATT GTTAGTAGT CTTTCTTAT  
ACATACTCAA CAGCTGCTC CCAAGATGCT GTAGGATTAT GTCTAGAGTC AAAGTAGCCA GAAGCAATGT CCAAAATACA  
CCATAACACT GTGAGCAAAA GGTCCTACTA CCCTTGTGTT GGCCCAACA TTCTAGGCAG CACTGGATAT CTGAATCATC  
AATTATTTCC ACAAACACTG ACCCTCTAC CAGTCACCCT CACTAGAAGA ATTAATTCCA CATGATAATA GCTCCCTCAT  
GTTACTCCCT TCTAAGTCAA ATTGTACACC CTTTATCTG ATTAACAGAG TCTAAGTCAC ATGACCTAAA TGCAAGAGAA  
CTGGGAATGG ACGTTGTGG ATTCTACCT AGTAAGGCAA AGTTATCATT GGAATTCCT CTAATACAGG AAGGGTGTTC  
CAGAGACATT AAGGAGCCAT ATAAATGGA AATGTCCAT ACAATCCATC ACTTGGTTGC CCCACATCAA CATTCTTCT  
TTTGCCACAC TTAAGTTTC CAAGAACAAA AATTATCCCA CTGAACATAA TCTTACTAT CTTTATATA AAGGAAAATT  
AGACTTGACT CAGCAGAACT GAAATAACCC AGCTCTAACA GTTACTGCTT TTAACCTCAA GTACTGTGTC TCTAGGTGAT  
ACCTGCTCCA ACAATAGTTT GGTACATTT TCAATTTGAT ATTCTCTAGT CTCCCAACTT GATAACTGTA CCCTAAACCA  
TAAAGTTTAC TACCAACATG CTATATATAA AATAACAAA GGGGGAAGAA GAAAGAGAAA AAGGAAATCT CTTAAATAC  
ACAGGTATAC ATACACAAA GCAAAGAAG AATGTGAGC AGATAGTGCA GTCCTCGTT CTGAATTTGG TCCCTGACT  
GGGGCTATAC CTATTCCATT TCCTCACCCT CAGCCAGGCA GGTGGAGCAA AAACCTAAGT CTTGGTGAT CTGAATCTTG  
ATGCTGTGGA GCTGTCTTAC TAGCCCCAGA CTACCTGCCT CTCAATTTCT AATTATATCA GTGAAAGCAA ACAGCTTTGA  
TTTGTTAAG CTCTGATT TTTGGTCTAA CTGATGTAAG ACCACAAGGA CAAGAGTTCT CCAGCTCCGG ATTCTCTTCT  
GTTCTGTAA TGGTGAAATG CCCGAGAGAA GAGTTGCCAA CTTTGGCAA TAAAAAATAC AGGATCCAG TAAATTCAA  
ATTTAGATA ACAACAATTT TTTAGTATTA GTGTGTCCTA TTCAATATT GGACATACTT AACTAAAAAA TGATTTGTG  
TTCATCTGAA ATACAAATTT AACTGGGCAT TCTGAATATT CTCTGGCAAC CCCCAGAGA GTGAAGAAAG TGGTACAAGG  
ACACTTAAGA AGACCAGATT TGAAAGACA TTACGGATGT GTTAAATGT CTTATTCTAG AGAGAGTTAG AGCTGATGGT  
AGAATTGGG AAATTAAGTT AAAAGCAGAC ACAGAGACCT GGCCAATATA TACTAAGGAG TGGATCACTC TGGTACAAG  
CCCAACCTGA GACCAAGGGC ATAGTGAGAT GATTGGGAA AGGCATTAT AACTACTCA TCCCGTCTT TGAATAAAT  
GCCTTATAA TCTCAAGAG AAATGACAGT CCACCATGTG GACTGCTTTC TGTAAGTCCA GGGAAATAA AAGCTATGTG  
CTTGAAACCC ACTTCTGATA TTATAAGGTG TGTGATCTT GTCATGTAA TGGGTCTGAG TATCAATTCT ACAATTGTAA  
AGTGACAGTA ATGGTGTGTC CCCAGTTGT TGTGAAAGC TTGATTCTTA ATGCAACAGT AGGAAACCCC AGCCTCTCTG  
GAGCAACAC CTTCTACAT CTTTACTTCC CTGCACATT GGCAGACTC TATTCCTCTA TTTCTCTA GTGCTAGAGC  
AGAAAGGGAC CTTGATTGTA TATCAGGAAA ATCTATTTCT GAACCATAAG CTATGATAGC TGATTAAAAA AATTGACTAT  
CATGACATGA TAATGATCAT AATGGTAATA CATATTGATA GGGTGGCGT GAAAGTAATA ATATATCTAA GAGTTGTGAC  
AATATATGAT ACGCCTAGAC TCTCAGAAAA TGCTAATTCC AATCCCAATT GCTCTTTGCA TAAAGTTCTG TCCTAGGGTC  
TGTTCTTTT CCACATCTAC CTTCTTGG TCTCTTCT GTCTTTTCA TGTGGTTCAG AGGAGGAGAG AGATCCAGGT  
CAATGTTTTT CAAATTACAA GGAATTATCA TTTAAATGGG GAAGAAGCTC AAGTTTTGAC GTGTAGTGA ATTGGAGTGG  
AGTGGAGTGG AATGGAAACT AACAGGAAGA CACTGCACAT GGTAAAGATA AAGATTGTTT CTGAAACCT TTAATTGTG  
CTTACATACT CACACATACA TATGTGCATG CACTGGGACT CTGCAATATG CATTCTGAC TATGGAACAT AGCCATAAAA  
GTCTTGCAC TGAACGTTCA GTGGGCTTT CACAAGCTGC CTAATTGGG AAAGAAAAAC ATGGTCCCTC CATTCTCTGC  
CCCCAATCC AGAAAAGTCA CCATAGTTGA GGGTACATCT GAGAAGCCAG CATTGGGAG TTCAGGGCTC AAGTCTCTT  
CTAGAAAAAC ACTGGGTGAT TCTAGGGGAA CTTCCGATCA GAAACAGCCA ATTCAGAGTG AGAGAAGAAA ACGTGACCAT  
GCAGTTCTG TGGTTACCAG CTTGGCCCT CTCTGCTT CTGGGAGTTA TAAACCCAA GACTGGAAAG GAAACCCAGC  
ATTGCTCAG GCAGCTCTC TGGGAAGATG CTGCTTCTT CTCTCCCTT GCTGCTCTT CTCTGTGCT CCAGAGCTGA  
AGCTGGTGAG TATCAGGGT CTTCCCTCTG AAATCTGCAG TATCAGCTCC TGAAACAAAG ATGTTTAGT TGAAATAGCT  
GACTCTAAA CAGGGTTCCA AGATCTCTCT TCAAGAGTCC CACAGAGGAA ATTTCCACTT GGGATGTGTG CCACCCACC  
CCCACCCCA CCACTGCCA TTCTTACAG CTTAGGACAC CCCCAGGAAC AAGGAATTC ACCTCAATTG TAGAAAAGCC  
CAGAGCAAGT GGAAGGAAAA GGGGTATCCC CAGGAAAAA GACATGTCTT CTTAATCTT TGAGCATCAG GGCTACCCAT  
TACTTTGTGA CTTTCTACT CTGTGACCAT GCTCAAGAGC TATGGAGAAA TCTAAAAACAG GAACCTGGAC AGTGGGTCT  
ACACAGAGAC AGAGGAGAGT GGGCCAGGC AAGGTGGGAG TGGGAGAGT CTGAGATGAA AACATCAGAA  
TGGAGCAGAG GCAAGAATGA GATTACCT GGGAGTTAT GGGTGGGAA AGATACGAAA TACAGGAGAC

AGGAGAGGGA AGATGGGCGG AACACAGGGT GAGAATGAGA TTCCAGGGAA GCCTAGCTCA GCTTTAACCC AATTGTGCCA  
TTCATTGGAG AGAGTATCTA TGGCCGTGTT CAAACCCTGG GGTGCTCTGT TCCAGGGGAG ATCATCGGGG GCACAGAATG  
CAAGCCACAT TCCCGCCCT ACATGGCCTA CTTGGAAATT GTAACCTCCA ACGGTCCCTC AAAATTTTGT GGTGGTTTCC  
TTATAAGACG GAACTTTGTG CTGACGGCTG CTATTGTGC AGGAAGGTGA GACAACAGGG TCTATTTATC TCCAAATGGG  
AGATGAACAA CCAGAGTAGC ATCCAGGAAT ACACCTGCAC TGGGGACTGA AGAGGGGGTC CTGGGTCTTG TCAACTTTCA  
GGAGAGGGAA GACTTTGGGC TGAAAGACTT TAGTCTGTGT TTGAATAGTT CCTTGAGCCT CAGTCACTGA GCTAAGCTCC  
CTTCGGAGGA AAAGGAGGTC CTGTCCGAAG GTCCCTCTTG TTGCAGTAGC ACCCTCACC CTTACCCAAC TCAAGACACA  
CGGCTCACTT TTCAGGGCCC CACCCAGTCT CAGGGCCACT TCCTCTATGG CCTTTTCAAG AACACTGGCT CTAGTTCTCA  
GGGTCTGAA CCCATCATTT TATGGGAGCA GAGAACAGGT CTACATAAGA CCCCCACTTT CCCGTTTTAA CTGATATCTC  
CTGCTTCAGG GGCTGGCCCT CATGCAGGGT TCCCTGAATT AGGAAGTGTG AACCTGTGCC CTGAGTCTC CCCTGGCCTG  
TTCAGTCCCC AGCAATTCCA GGGGTGCTAG AAATTGTGTC TGTTTCTGTA GAAAGCTCTT TCATGAGTTA AGCCTGAGCC  
CTCAAATGCC ACAATGGGCC CATGAAAAGG GAGATGGGTA GAGTCCGGCN ACCCAGTGAC AGAGTTTAGT CCTCTTTCT  
CAGAAAGAGC TCACCTCAGA AGAAACCCCA AGCATCACT GTCCCTCTCT TTTCTTCTCT TCTTCTCAC AGCAGGCTCA  
TAACAGTCAC CCTTGGAGCC CATAACATAA CAGAGGAAGA AGACACTGG CAGAAGCTTG AGGTTATAAA GCAATTCCTG  
CATCCAAAT ATAACACTTC TACTCTTAC CACGATATCA TGTTACTAAA GGTGACAACA CCTCTTCTCT CCCTTTCCAC  
TTCCCATTTCT CTAAGCTTC TCCTTCAGGT CTCATTGCC CTGAATTTT CTTAGGACTT GGCTATAACA TGAAGCTACT  
CACCTGTCC CTCCCTGATC ACCTCCAAC GTCCAGAGCC CATTTCGAGG ACTGACAGTC CTTTATTCCC TTCACAGTTG  
AAGGAGAAAG CCAGCCTGAC CTGGCTGTG GGGACACTCC CCTTCCCATC ACAATTCAAC TTTGTCCAC CTGGGAGAAT  
GTGCCGGGTG GTGCTGGTGG GAAGAACAGG TGTGTTGAAG CCGGGCTCAG ACACTGTGA AGAGGTGAAG CTGAGACTCA  
TGGATCCCCA GGCCTGCAGC CACTTCAGAG ACTTTGACCA CAATCTTCAG CTGTGTGTGG GCAATCCCAG GAAGACAAAA  
TCTGCAATTA AGGTGATCCT CCAACTAGGT TTCCTTCCA AAATCACTG TTCAGGGACC TGAATGCTCT TAGAAGGAGA  
TGGGTGACG AGGTTGTGAG TCAGGTGACA GGGTGAGCAT CACAGGAATT GCTGTCTCC CGTGGTCCAA GACAGCTCT  
GACCATCCAT TCCAGTCTAC TGCCTGGGG GCATGGGGTG ACTGTGGAGA ATGTGGATGA CGGTCCCAAG AAAGGAAGAA  
GGGGCATCAG AACTAGATGT ATAAGTGAGG AGTCCACCT CCTGGGTCTG ACTTTAGGTC TCACTGTGAC TCCAAGCTGG  
CTGGCAGACA GGAGTGGAGG ACTTCCCGG CTACCTTCT TCTCTCTC CTCCCTAC AGGGAGACTT TGGGGCCCT  
CTTCTGTGTG CTGGGGTGGC CCAGGGCATC GTACCTATG GACGGTCCGA TGCAAAAGCCC CTGCTGTCT TCACCCGAAT  
CTCCATTAC CGGCCCTGGA TCAACCAGAT CTGCAGGCA AATTAATCCT GGATCCTGAG CCAGCCTGAA GGAAGCTGG  
AACTGGACCT TAGCAGCAAA GTGTGTGCAA CTCATTCTGG TTCTACCTT GGTTCCTCA GCCACAACC TAAGCTCCA  
AGAGGTCTCC TACAGGTAAC AGAATTTCA ATAACTTCA GTGAAGACAC AGCTTCTAGT CGTGAGTGTG TGTCCTCTC  
TGCTGCTCTC TTCTCTGCA CATGTGACCT GATTCCCAGC CCAAGCACCA AGGA CACCGTCTCT GTCAGCCAAC  
AAATATCCAT TGAGCGACAC CTGTGTCCCA GGTGTGCTC TGGGCCCTGG GAGAAGTGCA TCAGTGGGT TGGTAGTAGA  
GGGTAGGAGT GGAGTGAAGG GTAGGCAGGA AGAATGTCCC CAGGTGTGTA GGAGGTGGGGT TGGGGCTT CAGTCTCAA  
ACTCCCATGA AAACCAGAGA GAAGTTTCA AACTCCACC AAGAGGCTGG GTTTCTAGGG CCCAGAGCTG CCTCCCCCA  
CCCTAGAATG GGCTATAAAA GTCCCTTCCC AGTACGTCC AGAGAAGAGC TGGAGGAAGT GAGAGGTGG CTGGGGGTCC  
TCAAAGTGAG AGGGGAGCAG AGGATCCTCC CGTGACGGT GTGGATGTCA CTACTTCCC AGCTGGTGAA GCCTCGCTGC  
AGAGATGCAT CTGCTCCAG CCCTGGCAGG GGTCTGGCC AACTCGTCC TCGCCACGCC CTGTGAGGGC ACTGACCCAG  
GTAATAGTCC CTTAGACAGG CAAGGAGGAG GGAGGGGAAA TGGAAAGGGA AGCACTGGG TCTTGGAGGG GGTCTTGTGG  
CTTGCTGAAC CTGAGTCCC CATCTTTG AACAGTCCC CTTGGGCGAG TGGAGACCTC GGTCTGCGA GACTGCATAG  
CAGAGGCCAA GTTGTGTGTG GATGCTGCT ACAATTGGAC CCAGAAGAGG TGGACTTGGG TCTGGGGCT GCATGGGCT  
GGGAGGATCA GT TAATACCTTG TGGGGTCAGG GAGCCCATGT CCCGTGCTGA TGTTATTTCC CCACCAGGTC  
CGGGCTGTCT CCAACCAGAT TGTGCGCTT CCAATGAGA GACTGACCTC CGACCGTGGC CGAGCCCTCA TGTTATGCA  
GTGGGGCCAG TTCATTGACC ATGACCTGGA CTCTCCCG GAGTCCCGG CCAGAGTGGC CTTACTGCA GGCCTGACT  
GTGAGAGGAC CTGCGCCAG CTGCCCCCT GCTTCCCAT CAAGGTACCT ACCCTCAGCC AATCTCCAT GCCCTTGTGT  
GGCTCCCCC AAAGCAAGG TGCTGGGGT GGGATCTGG AAGACTGTGAG CACCATCTT AAGGAGCTGC CTGTGGAGCT  
AGGGTATGAG ACAGAGACAC AAG CACTGTCTC TCTTCCATCT CAGATCCCAC CCAATGACCC CCGCATCAAG  
AACCAGCGT ACTGCATCCC TTTCTTCCG TCGGCACCT CATGCCCCA AAACAAGAAC AGAGTCCGA ACCAGATCAA  
CGCGCTACC TCCTTTGTG ACGCCAGCAT GGTGTATGG AGTGAGGTCT CCTCTCGCT CGGCTCCG AACCAGCA  
ACTACCTGGG GTGCTGGCC ATCAACCAGC GCTTCAAGA CAACGGCGG GCCCTGCTGC CCTCGACAA CCTGCAGAT  
GACCCCTGTC TCCTACCAA CCGCTCGGG CGCATCCCT GCTTCTGGC AGGTCAGACA GGGAGGAAGG TGGTGTCTC  
CCAGGAACA GCCATCCCT GGGTCCCAAC TGGGAAGCAA TGGTGGGATG TGGTGAAGT ACATGGTTT GGACCTCAGT  
ATTAGGCACA CCATAAGCAT GGATCTGTG AC TGAAGAGATG GAGGTCCAGT GAGGGGAGG AGTTTGGCCC  
ACCCGCTCTC TCCCATCCCC AGCCCTGGT CTACCTGGT AGAAAGACAT TTCTTGGA AAGGTGCG TAAATCTGAG  
CTTGGGGTT TCAAGGTGAC ACCGATCAA CGGAAACCC CAACTGGCA GCCATGCACA CCTCTTTAT GCGAGAGCAC  
AACCAGGCTG CCACCGAGCT GAGACGCTG AATCCCCGT GGAATGGAGA CAACTGTAC AATGAGGCTC GGAAGATCAT  
GGGGGCCATG GTCCAGGTAA GGAGCTCTG ATCCAGCAT CCCC CTTGTATCT CCACCCACA ATAGTAAAT  
AATGTTGCA CATTTGACGT GATGACAATA AAGATATGT CTGAGCCACC CTTGAAAAG GCAAGGGTAT GGGTGAGTAG  
CCTTGGGA ATGTTCTCT TGTCTTCCCT TCCAGTATC CACTACCGA GACTTCTGC CCTGTCTCT GGGCAAGGCC  
CGGGCCAGGA GAACCTGGG GCACTACAGG GGTACTGCT CCAATGTGA CCCACGGGTG CCAATGTCT TCACCTGGC  
CTTCCGCTT GGCCACAAA TGCTCCAGC CTTATGTT CGCTGGACA GTCAGTACC GGCCTCCGA CCAACTCGC  
ATGTCCACT TAGCTCTGCC TTCTTGCCA GCTGGCGAT CGTGATGAA GGTGACCAGG TTTCCAGGG GGCAATGGG  
GGTGAGGGT GGGAGCATGC CTCCCTAG GTGG TCCAGTCTCT TCATGTCTCT CCAGAATCT GTTCTCTGAC  
AAACGTTACT AACATACCG ACTGGCTGT CAGCTCTGG GCTAGCTTG CATCATGTGA TAACCAAGT AGCTTCCAG  
AGGCTGTCC AATCTGTCT GCTCACATC CTGCCACA GGGGCGATC ACCCATCT CCGGGGCTC ATGGCCACC  
CTGCCAAGT GAACGTCAG GATGCCATGT TAGTGGATGA GCTCCGGAC CGGCTGTTT GGCAAGTGA GAGGATGGG  
CTGGACCTGG CAGCTCTCAA CATGCAACGA AGCCGGGACC ACGGCTTCC AGGTGAGGGG GCTGTCCACC TCTTCTCCA  
GCTTGTCTG GGCCAGGCTG CTCAAGGGT TCTGGGAAGA CCTGGTACC CGACTGCTG GTAGGTTCTG GTGGCAGAAA  
CGAGGTGTTT TCACCAAAAG ACAGCGCAAG GCCTGAGCA GAATTTCTT GTCTCGAAT ATATGTGACA ATACGGTAT  
CACCACGGT TCAAGGGACA TCTCAGAGC CAACATCTAC CTTGGGGCT TTGTGAAGT CAGCCGTATC CCCAGTTGA  
ACCTATCAGC CTGGCGAGG ACATGAGGCT TCTGCAGTA AGGGGAGGCC ACCTCAGCA CCTGGGCTG GTTAAGCCTC

ACATCCTTCC CTGGATGGAT GGCTGAGTCC TCTTAGGTCT CTAAGCAGAG AAAACAGAAC TTGTCACTAG GTACTCTTTC  
CAAGTGGCTT CCAATGTGC TAGTTTCTGG GCTGACAGTC AATTCCAGGC CCTAGGACTT TGGGGGAAAA TTAGGAGCAT  
CCAATA GAATTCCTGT GCCAGGACCC CTGCCAGGGC ACTGACCCAG CCTCCCCTGG GGCAGTGGAG ACCTCGGTCC  
TGCGAGACTG CATAGCAGAG GCCAAGTTGC TGGTGGATGC TGCCTACAA TGGACCCAGA AGAGCATCAA GCAGCGGCTT  
CGCAGCGGT CAGCCAGCCC CATGGACCTC CTGTCTACT TCAAACAACC GGTAGCAGCC ACCAGGACAG TTGTTCCGGC  
CGCAGATTAT ATGCATGTGG CTTTGGGGCT GCTTGAAGAG AAGTTACAAC CCCAGCGGTG CGGACCCCTC ATTGTCACTG  
ATGTGCTAAC AGAACACAG CTGCGGCTGC TGCCCAGGC CAGTGGCTGT GCTCTCCGG ACCAGGCCGA GCGCTGCAGC  
GACAAGTACC GCACCATCAC TGGACGGTGC AACAACAAGA GGAGACCTT GCTAGGGGCC TCCAACCAGG CTCTGGCTCG  
CTGGCTGCC GCCGAGTATG AGGATGGGCT GTCGCTCCCC TTCGGCTGGA CCCCCAGCAG GAGGCGCAAT GGCTTCTTTC  
TCCCTCTGT CCGGGCTGTC TCCAACCAGA TTGTGCGCTT CCAATAGAG AGACTGACCT CCGACCGTGG CCGAGCCCTC  
ATGTTCTAGC AGTGGGGCCA GTTCATTGAC CATGACCTGG ACTTCTCCCC GGAGTCCCCG GCCAGAGTGG CCTTCACTGC  
AGGCGTTGAC TGTGAGAGGA CTGCGGCCCA GCTGCCCTTC GTCTTCCCA TCAAGATCCC ACCCAATGAC CCCCAGTCA  
AGAACAGCG TGAATGCATC CTTTCTTTC GCTCGGCACC CTCATGCCCC CAAAACAAGA ACAGAGTCCG CAACCATC  
AACGCGCTCA CCTCCTTGT GGACGCCAGC ATGGTGTATG GCAGTGAGGT CTCCTCTCG CTGCGGCTCC GCAACCGGAC  
CAACTACTG GGGCTGTGG CCATCAACCA GCGCTTCAA GACAACGCC GGGCCCTGCT GCCCTTCGAC AACCTGCAG  
ATGACCCCTG TCTCTCACC AACCGCTCG CGCGCATCCC CTGCTTCTG GCAGGTGACA CCGATCAAC GGAAACCCCC  
AACTGGCAG CCATGCACAC CCTCTTATG CGAGAGCACA ACCGGCTGGC CACCGAGCTG AGACGCTGA ATCCCGGTG  
GAATGGAGAC AAATGTACA ATGAGGCTCG GAAGATCATG GGGGCCATGG TCCAGATCAT CACTACCGA GACTTCTGC  
CCTGGTTCT GGGCAAGGCC CGGGCCAGGA GAACCTGGG GCACTACAGG GGTACTGCT CCAATGGGA CCAACGGGTG  
GCCAATGTCT TACCCTGGC CTTCGCTTT GGCCACACA TGCTCCAGCC CTTCATGTT CGTTGGACA GTCAGTACCG  
GGCCTCCGA CCAACTCGC ATGTCCACT TAGCTCTGCC TTCTTTGCCA GCTGGCGGAT CGTGTATGAA GGGGGCATCG  
ACCCATCCT CCGGGGCTC ATGGCCACCC CTGCCAAGCT GAACCGTCAG GATGCCATGT TAGTGGATGA GCTCCGGGAC  
CGGCTGTTT GGCAAGTGAG GAGGATTGG CTGGACCTGG CAGCTCTCAA CATGCAACGA AGCCGGGACC ACGGCTTCC  
AGGTAGAC GCTTGGAGG GCTTCTGTGG GCTCTCCAG CCCCAGGATT TGGCACAGT TAGCCGGGTG CTGAAAAACC  
AGGACTGGC AAGGAAGTTC CTGAATTGT ATGGAACACC TGACAACATT GACATCTGGA TTGGGGCCAT CGCTGAGCTT  
CTTTTCCGG GGGCTCGAGT GGGGCTCTT CTGGCTGTG TGTTGAGAA CCAGTTCAGA AGAGCCGAGA CGGAGACAGG  
TTCTGGTGGC AGAAGGAGT GTTTTACCA AAGACAGCGC AAGGCCCTGA GCAGAATTTT CTGTCTCGA ATTATATGTG  
ACAATACCGG TATCACCAG GTTTCAAGGG ACATCTCAG AGCCAACATC TACCCTCGGG GCTTTGTGAA CTGCAGCCGT  
ATCCCAAGT TGAACCTATC AGCCTGGCGA GGGACATGAG GCTTCTCGAG GAGTCTATCC CAAGTCTCCA ACTTTTGGAG  
ACAAGGGGAA GGGAGGACC ATGAGGCTCG CTGTCTCCC TGGAGCAAGT GCAGGCTCGT GACGCTTCTG CTGGCTACAG  
CTCAGAGCTG GTTCCCCAG CCAGGAGTGA AGCTGGGGG CTCCTATCAG CAATGGACCT TCCGCTTGG GAGCCTCTTA  
GGTATTAGG TATGAATCAG CGCCACGTGC AAAGGCTTGG GAGCCAAGCC ATGTGGTCTT GCACCCAGG CAAGAAAAAGT  
CAGCTGGAG GTTACAGCA CTTTCTACTG TTTCCAGCC CTCCTCCCC TCCCTACCA TGAATAAGAG ACCACTCGGT  
CCTAGCCTCC AGACACCCCA CAATACTCT CTGAGCCTGA GGCCAGGCAG CATGCTCTG TCTACCAAT AAAGCACTGC  
CGGAATTC CATATGTATG GGAATACTGT ATTTACAGGCA TTATAAGGAA TGAAATTATA GGCCGGGCAT  
TGTGGCTAAC CCTTGTATC CTAGCACTTT GAGAGGCTGA AGTGGGCAGA TCACCTGAGC TTCAGAGTTC  
GAGACCAGCA TGGACAACAT GGTGAAACCC AGTCTCTACC AAAAAACAAA AAATATTAGC TGGGTGTGGT  
GGTGCATGCC TGTAAGTCCA GCTACTCAGG AGGCTGAGGT GGGAGGATCG CTGAGCCTG GGAGGCAGAA  
GTTGCAATGA GCAGAGATCG TGCCACTCCG CTCCAGTCTT GGTGACAGAA TGAGACTCCA TCTCAAAAAT  
AAATAAATA ATAAATAAAA TAAATGAAAT GAAATTATAA GAAATTACCA CTTTTCATG TAAGAAGTGA  
TCATTTCAT TATAAGGGAA GGAATTTAAT CCTACCTGCC ATTCCACCAA AGCTTACCTA GTGCTAAAGG  
ATGAGGTGT AGTAAGACCA ACATCTCAGA GGCCTCTCTG TGCCAATAGC CTTCTTCTT TCCCTTCCA  
AAAACCTCAA GTGACTAGT CAGAGGCCGT TCTGGAATAA TGGCATCATC TAATATCACT GGCTTCTGG  
AACCTGGGCA TTTTCCAGTG TGTTCCATAC TGTCATATT CCCCCAGCTT CCTGGACTCC TGTACAAGC  
TGAAAAAGTG AGAGGATGGA CAGGGATTAA CCAGAGAGCT CCCTGCTGAG GAAAAAATCT CCCAGATGCT  
GAAAGTGAGG CCATGTGGCT TGGCCAAATA AAACCTGGCT CCGTGGTGCC TCTGTCTTAG CAGCCACCCT  
GCTGATGAAC TGCCACCTTG GACTTGGGAC CAGAAAGAGG TGGGTGGGT GAAGAGGCAC CACACAGAGT  
GATGTAACAG CAAGATCAG TCACCCACAG GCCCTGGCAG TCACAGTCAT AAATTAGCTA ACTGTACACA  
AGCTGGGGAC ACTCCCTTG GAAACCAAAA AAAAAAGAGA CCTTTATGCA AAAACAATC  
TCTGGATGGC ATGGGGTGAG TATAAATACT TCTTGGCTGC CAGTGTGTTT ATAACTTTGT AGCGAGTCGA  
AAACTGAGGC TCCGGCCGCA GAGAACTCAG CCTCATTCCT GCTTTAAAAAT CTCTCGGCCA CTTTGATGA  
GGGGACTGGG CAGTTCTAGA CAGTCCCGAA GTTCTCAAGG CACAGGTCTC TTCTGGTTT GACTGTCTT  
ACCCCGGGGA GGCAGTGCAG CCAGCTGCAA GGTGAGTTGC C CATATGTATG GGAATACTGT ATTTACAGGCA  
TTATAAGGAA TGAAATTATA GGCCGGGCAT TGTGGCTAAC CCTTGTATC CTAGCACTTT GAGAGGCTGA  
AGTGGGCAGA TCACTTGAGC TTCAGAGTTC GAGACCAGCA TGGACAACAT GGTGAAACCC AGTCTCTACC  
AAAAACAAA AAATATTAGC TGGGTGTGGT GGTGCATGCC TGTAAGTCCA GCTACTCAGG AGGTGAGGT  
GGGAGGATCG CTTGAGCCTG GGAGGCAGAA GTTGAATGA GCAGAGATCG TGCCACTCCG CTCCAGTCTT  
GGTGACAGAA TGAGACTCCA TCTCAAAAAT AAATAAATAA ATAAATAAAA TAAATGAAAT GAAATTATAA  
GAAATTACCA CTTTTCATG TAAGAAGTGA TCATTTCAT TATAAGGGAA GGAATTTAAT CCTACCTGCC  
ATTCCACCAA AGCTTACCTA GTGCTAAAGG ATGAGGTGTT AGTAAGACCA ACATCTCAGA GGCCTCTCTG  
TGCCAATAGC CTTCTTCTT TCCCTTCCA AAAACCTGAA GTGACTAGT CAGAGGCCCTG TCTGGAATAA  
TGGCATCATC TAATATCACT GGCCTTCTGG AACCTGGGCA TTTTCCAGT TGTTCCATAT TGTCAATATT  
CCCCAGCTT CCTGGACTCC TGTACAAGC TGGAAAAAGT AGAGGATGGA CAGGGATTAA CCAGAGAGCT  
CCCTGCTGAG GAAAAAATCT CCCAGATGCT GAAAGTGAGG CCATGTGGCT TGGCCAAATA AAACCTGGCT  
CCGTGGTGCC TCTGTCTTAG CAGCCACCCT GCTGATGAAC TGCCACCTG GACTTGGGAC CAGAAAGAGG  
TGGGTGGGT GAAGAGGCAC CACACAGAGT GATGTAACAG CAAGATCAGG TCACCCACAG GCCCTGGCAG  
TCACAGTCAT AAATTAGCTA ACTGTACACA AGCTGGGGAG ACTCCCTTG GAAACCAAAA AAAAAAATAA  
AAAAAAGAGA CCTTTATGCA TCTGGGTGAG ATGGGGTGAG TATAAATACT TCTTGGCTGC  
CAGTGTGTT ATAACCTTGT AGCGAGTCGA AAACCTGAGG TCCGGCCGCA GAGAACTCAG CCTCATTCCT

GCTTTAAAT CTCTCGGCA CCTTTGATGA GGGGACTGGG CAGTTCTAGA CAGTCCCGAA GTTCTCAAGG  
CACAGGTCTC TTCCTGGTTT GACTGTCTT ACCCGGGGA GGCAGTGCAG CCAGTGCAG GGTGAGTTGC C  
CTGCTTTAA ATCTCTGGC CACCTTTGAT GAGGGGACTG GGCAGTTCTA GACAGTCCCG AAGTTCTCAA GGCACAGGTC  
TCTTCTGGT TTAGTGTCC TTACCCCGG GAGGCAGTGC AGCCAGTGC AAGCCCCACA GTGAAGAACA TCTGAGCTCA  
AATCCAGATA AGTGACATAA GTGACCTGCT TTGTAAAGCC ATAGAGATGG CCTGTCTTG GAAATTTCTG TTCAAGACCA  
AATTCACCA GTATGCAATG AATGGGGAAA AAGACATCAA CAACAATGTG GAGAAAGCCC CCTGTGCCAC CTCCAGTCCA  
GTGACACAGG ATGACCTTCA GTATCACAAC CTCAGCAAGC AGCAGAATGA GTCCCGCAG CCCCTCGTG AGACGGGAAA  
GAAGTCTCCA GAATCTCTGG TCAAGCTGGA TGCAACCCCA TTGTCTCCC CACGGCATGT GAGGATCAAA AACTGGGGCA  
GCGGGATGAC TTTCCAAGAC ACACCTTACC ATAAGGCCAA AGGGATTITA ACTTGACAGT CCAAATCTTG CCTGGGGTCC  
ATTATGACT CCAAAAGTTT GACCAGAGGA CCCAGGGACA AGCCTACCCC TCCAGATGAG CTCTACCTC AAGCTATCGA  
ATTGTCAAC CAATATTACG GCTCCTTCAA AGAGGCCAAA ATAGAGGAAC ATCTGGCCAG GGTGGAAGCG GTAACAAAGG  
AGATAGAAAC AACAGGAACC TACCACTGA CGGGAGATGA GCTCATCTTC GCCACCAAGC AGGCTGGCG CAATGCCCA  
CGTGCAATG GGAGGATCCA GTGGTCCAAC CTGACGGTCT TCGATGCCCG CAGCTGTTC ACTGCCCGG AAATGTTGA  
ACACATCTGC AGACACGTGC GTTACTCCAC CAACAATGGC AATCATCAGT CGGCCATCAC CGTGTTCCTC CAGCGGAGTG  
ATGGCAAGCA CGACTTCCGG GTGTGGAATG CTCAGCTCAT CCGCTATGCT GGCTACCAGA TGCCAGATGG CAGCATCAGA  
GGGGACCTG CCAACGTGGA ATTCACTCAG CTGTGCATCG ACCTGGGCTG GAAGCCCAAG TACGGCCGCT TCGATGTGGT  
CCCCCTGGT CTGACGGCCA ATGGCCGTGA CCTGAGCTC TTGAAATCC CACCTGACCT TGTGCTTGAG GTGGCCATGG  
AACATCCCA ATACGAGTGG TTTGGGAAC TGGAGCTAAA GTGGTACGCC CTGCTGCAG TGGCCAACAT GCTGCTTGAG  
GTGGGCGGG TGGAGTTCCC AGGGTGCCCC TTCAATGGCT GGTACATGGG CACAGAGATC GGAGTCCGGG ACTTCTGTGA  
CGTCCAGCG TACAACATCC TGGAGGAAGT GGGCAGGAGA ATGGGCTGG AAACGCACAA GCTGGCCTCG CTCTGAAAAG  
ACCAGGCTGT CGTTGAGATC AACATTGCTG TGATCCATAG TTTTCAAGAG CAGAATGTGA CCATCATGGA CCACACTCG  
GCTGCAGAA CTTCATGAA GTACATGCAG AATGAATACC GGTCCCGTGG GGGCTGCCCG GCAGACTGGA TTTGGCTGGT  
CCCTCCCATG TCTGGGAGCA TCACCCCGT GTTTCACAG GAGATGCTGA ACTACGTCT GTCCCTTTC TACTACTATC  
AGGTAGAGGC CTGGAAGACC CATGTCTGGC AGGACGAGAA GCGGAGACCC AAGAGAAGAG AGATTCCATT GAAAGTCTTG  
GTCAAAGCT TGCTTTTGC CTGTATGCTG ATGCGCAAGA CAATGGGCTC CCGAGTCAGA GTCAACATCC TTTTGGCAG  
AGAGACAGGA AATCAGAGG CGCTGGCCTG GGACCTGGG GCCTTATTCA GCTGTGCTT CAACCCCAAG GTTGTCTGCA  
TGGATAAGTA CAGGCTGAGC TGCCTGGAGG AGGAACGGCT GCTGTTGGTG GTGACCAGTA CGTTTGCA TGGAGACTGC  
CCTGGCAATG GAGAGAACT GAAGAAATCG CTCTTCATGC TGAAGAGCT CAACAACAA TTCAGGTACG CTGTGTTTG  
CCTCGGCTCC AGCATGTACC CTCGGTTCTG CGCCTTGTCT CATGACATTG ATCAGAAGCT GTCCCACTG GGGCCCTCTC  
AGCTACCCC GATGGGAGAA GGGGATGAGC TCAGTGGGA GGAGGACGCC TTCCGAGCT GGGCCGTGCA AACCTTCAAG  
GCAGCTGTG AGACGTTTG TGTCCGAGG AAACAGCACA TTCAGTCCC CAAGCTCTAC ACCTCCAATG TGACCTGGGA  
CCCGCACCAC TACAGGCTCG TGCAGGACT ACAGCTTTG GACCTAGCA AAGCCCTCAG CAGCATGCAT GCCAAGAAGC  
TGTTACCAT GAGGCTCAA TCTCGGAGA ATCTACAAAG TCCGACATCC AGCCGTGCCA CCATCTGGT GGAACCTCTC  
TGTGAGGATG GCCAAGGCT GAACTACCTG CCGGGGAGC ACCTTGGGT TTGCCAGGC AACCAGCCG CCTGTGTC  
AGGCATCTG GAGCGAGTGG TGGATGGCCC CACACCCAC CAGACAGTGC GCCTGGAGGA CCTGGATGAG AGTGGCAGT  
ACTGGGTCAG TGACAAGAGG CTGCCCCCT GCTACTCAG CCAGGCCCTC ACCTACTCC CGGACATCAC CACACCCCA  
ACCCAGTGC TGCTCAAAA GCTGGCCCAG GTGGCCACAG AAGAGCTGA GAGACAGAGG CTGGAGGCC CTGTGCCAGC  
CTCAGAGTAC AGCAAGTGA AGTTCACAA CAGCCCCA TCTCTGAGG TGCTAGAGGA GTTCCGCTC CTGCGGTGT  
CTGCTGGCT CTGCTTTCC CAGTCCCA TTCTGAAGC CAGTTCTAC TCCATCAGT CCTCCGGGA TCACAGGCC  
ACGGAGATCC ACCTGACTGT GGCCGTGGT ACCTACCACA CCGGAGATGG CCAGGGTCCC CTGCACCAG GTGTCTGCAG  
CACATGGCT AACAGCTGA AGCCCCAGA CCCAGTCCC TGCTTTGTG GGAATGCCAG CGCTTCCAC CTCCCGAGG  
ATCCTCCCA TCCTTGCAT CTCATCGGC CTGGCAGAG CATCGTGCC TTCCGAGT TCTGGCAGCA ACGGCTCCAT  
GACTCCAGC ACAAGGAGT GCGGGGAGG CGCATGACCT TGGTGTGTTG GTGCCGCCG CCAGATGAG ACCACATCTA  
CCAGGAGGAG ATGCTGGAGA TGGCCAGAA GGGGTGCTG CATGCGTGC ACACAGCTA TTCCGCTG CCTGGCAAGC  
CCAAGGTCTA TGTTCAAGAC ATCTGCGGC AGCAGCTGGC CAGCGAGGTG CTCGCTGTG TCCACAAGGA GCCAGGCCAC  
CTCTATGTT GCGGGGATGT GCGCATGGC CGGGACGTG CCCACACCT GAAGCAGCTG GTGGCTGCCA AGCTGAAAT  
GAATGAGGAG CAGGTCGAG ACTATTCTT TCAGTCAAG AGCCAGAAGC GCTATCAG AGATATCTT GGTGCTGTAT  
TTCTTACGA GCGAAGAAG GACAGGGTGG CGGTGACGCC CAGCAGCTG GAGATGTCAG CGCTCTGAGG GCCTACAGGA  
GGGGTTAAAG CTGCCGGCAC AGAACTTAAG GATGGAGCCA GCTCTGCATT ATCTGAGGT ACAGGGCCTG GGGAGATGGA  
GGAAGTGTAT ATCCCCAGC CTCAAGTCTT ATTTCTCAA CGTGTCTCC CATCAAGCCC TTACTTGAC TCTTAACAA  
GTAGCACCT GGATTGATCG GAGCTCTCT TCTCAAAGT GGGCTCCCT GGTCCCTTG AGACAAATC TAAATGCCA  
GGCTGGCGA GTGGGTGAAA GATGGAACCT GCTGTGAGT GCACCACTT AAGTGACCAC CAGGAGGTGC TATCGACCA  
CTGTGATTT AACTGCCTT TGTACAGTA TTTATGCTT TGTATTTAAA AACTAACAC CCAGTCTGT CCCCATGGCC  
ACTGGGTCT TCCGTGATG ATTCTTGAT GGAGATATT ACATGAATTG CATTTTACTT TAAT GAATCCAC  
TCTGTGCT GCTCCAGCAG ACGGACGCAC AGTAACATGG GCAACTTGA GAGCGTGGC CAGGAGCCTG GGCCACCTG  
CGGCTGGG CTGGGGCTGG GCCTGGGCT GTGCGGCAAG CAGGGCCAG CCACCCCGC CCTGAGCCC AGCCGGCC  
CAGATCCCT ATCCCAACA GCGCAGAAC ACAGCCCCC GAGCTCCCG CTAACCCAG CCCCAGAGG GCCAAGTTC  
CCTCGTGTGA AGAAGTGGGA GGTGGGGAGC ATACCTATG ACACCTCAG CGCCAGGCG CAGCAGGATG GGCCCTGCAC  
CCCAAGACG TGCTGGGCT CCCTGGTATT TCCACGAAA CTACAGGGC GGCCCTCCC CGGCCCCCG GCCCTGAGC  
AGCTGCTGAG TCAGGCCCG GACTTCATCA ACCAGTACT CAGCTCCATT AAGAGGAGCG GCTCCAGGC CCACGAACAG  
CGGCTTCAAG AGGTGGAAGC CGAGGTGGCA GCCACAGCA CTAACAGCT TAGGGAGAGC GAGCTGGTGT TCGGGGCTAA  
GCAGGCTGG CGCAACGCT CCCGCTGCT GGGCCGATC CAGTGGGGGA AGCTGCAGT GTTCGATGCC CGGGACTGCA  
GGTCTGCAC GGAATGTT ACCTACATCT GCAACCAT CAAGTATGCC ACCAACCGG GCAACCTTC CTGGCCATC  
ACAGTGTTC CGCAGCGCTG CCCTGGCCGA GGAGACTTC AACTCTGAA CAGCCAGCT GTGGCTACG CGGGTACCG  
GCAGCAGGAC GGCTCTGTG GGGGGGACCC AGCCAACGTG GAGATCACCG AGCTCTGCAT TCAGCACGGC TGGACCCAG  
GAAACGGTGC CTTCGACGTG CTGCCCTGC TGCTGCAGC CCCAGATGAG CCCCAGAAC TCTCTTCT GCCCCGAG  
CTGTCTCTG AGGTGCCCC GGAGCACCC ACGTGGAGT GGTTCGAGC CTTGGGCTG CGCTGTGACG CCTCCCGG  
AGTGTCAA ATGCTGCTG AAATTGGGG CCTGGAGTT CCCGAGCCC CTTCAAGTGT CTGGTACATG AGCACTGAGA  
TCGGCAGGAG GAACCTGTGT GACCCTACC GCTACAACAT CCTGGAGGAT GTGGCTGTCT GCATGGACCT GGATACCCG

ACCACCTCGT CCCTGTGGAA AGACAAGGCA GCAGTGGAAA TCAACGTGGC CGTGCTGCAC AGTTACCAGC TAGCCAAAGT  
 CACCATCGTG GACCACCACG CCGCCACGGC CTCTTTCATG AAGCACCTGG AGAATGAGCA GAAGGCCAGG GGGGGCTGCC  
 CTGCAGACTG GGCTGGATC GTGCCCCCA TCTCGGGCAG CCTCACTCTT GTTTTCCATC AGGAGATGGT CAACTATTTC  
 CTGTCCCCGG CTTTCCGCTA CCAGCCAGAC CCCTGGAAGG GGAGTGCCGC CAAGGGCACC GGCATCACCA GGAAGAAGAC  
 CTTTAAAGAA GTGGCCAACG CCGTGAAGAT CTCCGCTCG CTCATGGGCA CGGTGATGGC GAAGCGAGTG AAGGCGACAA  
 TCCTGTATGG CTCGAGACC GGCCGGGCCC AGAGTACGC ACAGCAGCTG GGGAGACTCT TCCGGAAGC TTTTGATCCC  
 CGGGTCTGT GTATGGATGA GTATGACGTG GTGTCCCTCG AACACGAGAC GCTGGTGCTG GTGGTAACCA GCACATTGG  
 GAATGGGGAT CCCCCGAGA ATGGAGAGAG CTTTGCAGCT GCCCTGATGG AGATGTCCGG CCCCTACAAC AGCTCCCCTC  
 GGCCGAACA GCACAAGAGT TATAAGATCC GTTCAACAG CATCTCTGC TCAGACCCAC TGGTGTCTC TTGGCGGCGG  
 AAGAGGAAGG AGTCCAGTAA CACAGACAGT GCAGGGGCCC TGGGCACCCT CAGGTTCTGT GTGTTCCGGC TCGGCTCCCC  
 GGCATACCCC CACTTCTGCG CTTTGTCTCG TGCCGTGGAC ACACGGCTGG AGGAACTGGG CGGGGAGCGG CTGCTGCAGC  
 TGGGGCAGG GCGAGAGCTG TGCGGCCAGG AGGAGCCCTT CCGAGGCTGG CCCCAGGCTG CTTCCAGGC CGCCTGTGAG  
 ACCTTCTGTG TGGGAGAGGA TGCCAAGGCC CGCGCCGAG ACATCTTTCAG CCCCAGGAGG AGCTGAGGTA  
 CCGGCTGAGC GCCCAGGCCG AGGGCCTGCA GTTGCTGCCA GGTCTGATCC ACGTGACAG GCGGAAGATG TTCCAGGCTA  
 CAATCCGCTC AGTGGAAAAC CTGCAAAGCA GCAAGTCCAC GAGGGCCACC ATCTGGTGC GCCTGGACAC CGGAGGCCAG  
 GAGGGGCTGC AGTACCAGCC GGGGGACCAC ATAGGTGTCT GCCCGCCCAA CCGGCCCGGC CTTGTGGAGG CGCTGCTGAG  
 CCGGCTGGAG GACCCGCCGG CGCCACTGA GCCCGTGGCA GTAGAGCAGC TGGAGAAGGG CAGCCCTGGT GGCCCTCCCC  
 CCGGCTGGGT GCGGGACCCC CGGTGCCCC CGTGCACGCT CGCCAGGCT CTCACCTTCT TCCTGGACAT CACCTCCCCA  
 CCCAGCCCTC AGCTCTGCG GCTGCTCAGC ACCTTGGCAG AAGAGCCAG GGAACAGCAG GAGTGGAGG CCCTCAGCCA  
 GGATCCCCGA CGTACGAGG AGTGGAAAGT GTTCCGCTGC CCCACGCTGC TGGAGGTGCT GGAGCAGTTC CCGTGGTGG  
 CGCTGCTGC CCACTGCTC CTCACCCAGC TGCTCTGCT CCAGCCCCGG TACTACTCAG TCAGCTCGGC ACCCAGCACC  
 CACCCAGGAG AGATCCACCT CACTGTAGCT GTGCTGGCAT ACAGGACTCA GGATGGGCTG GGCCCCCTGC ACTATGGAGT  
 CTGCTCCACG TGGCTAAGCC AGCTCAAGCC CGGAGACCTT GTGCCCTGCT TCATCCGGGG GGCTCCCTCC TTCCGGCTGC  
 CACCCGATCC CAGCTTGCCC TGCATCTGG TGGTCCAGG CACTGGCATT GCCCCTTCC GGGGATTCTG GCAGGAGCGG  
 CTGCATGACA TTGAGAGCAA AGGGCTGCAG CCCACTCCA TGACTTTGGT GTTCGGCTGC CGATGCTCCC AACTTGACCA  
 TCTCTACCGC GACGAGGTGC AGAACGCCCA GCAGCGCGGG GTGTTTGGCC GAGTCTCAC CGCTTCTCC CGGGAACCTG  
 ACAACCCCAA GACCTACGTG CAGGACATCC TGAGGACGGA GCTGGCTGCG GAGGTGCACC GCGTGTGTG CCTCGAGCGG  
 GGCCACATGT TTGTCTGCGG CGATGTTACC ATGGCAACCA ACGTCTGCA GACCGTGCAG CGCATCTGG CGACGGAGGG  
 CGACATGGAG CTGGACGAGG CCGGCGACGT CATCGGCGTG CTGCGGGATC AGCAACGCTA CCACGAAGAC ATTTTCGGGC  
 TCACGTGCG CACCCAGGAG GTGACAAGCC GCATACGCAC CCAGAGCTTT TCCTTGCAGG AGCGTCAGTT GCGGGGCGCA  
 GTGCCCTGGG CGTTCGACCC TCCCGGCTCA GACACAACA CCCCCTAGA GCCGCTGGC TTCCCTTCC AGTTCCGGGA  
 GAGCGGCTGC CCGACTCAGG TCCGCCCCGAC CAGGATCAGC CCCGCTCCTC CCCTCTTGG GTGGTGCCTT CTCACATCTG  
 TCCAGAGGCT GCAAGGATTG AGCATTATTC CTCAGGAAG GAGCAAAACG CCTCTTTTCC CTCTTAGGC CTGTTGCCTC  
 GGGCCTGGGT CCGCCTTAAT CTGGAAGGCC CCTCCAGCA GCGGTACCCC AGGGCCTACT GCCACCCGCT TCCTGTTTCT  
 TAGTCCGAAT GTTAGATTCC TCTTGCTCT CTCAGGAGTA TCTTACCTGT AAAGTCTAAT CTCTAAATCA AGTATTTATT  
 ATTGAAGATT TACCATAAGG GACTGTGCCA GATGTTAGGA GAACTACTAA AGTGCCCTACC CCAGCTC-3' (SEQ. ID  
 NO:2410)

### Human Factor Related Anti-sense Oligonucleotide

5'-CCT CCT TCC TGG TCT GTC TGC CBG BCB BBT TTG GGB BGT GBB CBG TTT TGG BBC CBT GTT TCC CBG TCT CTG  
 BGC TGT GGC GCC CTG CTG CTC TTT CTG CT TCC CTT GGT GGG TTG GGC C GCT GGT TGT TCT GGG GTT C TTG CTG  
 CCC CTT CTG TCC C TGT TTG CTG GTG TCT GCG C CCC CBB CBG BBG CBG BCB BBT TTG GGB BGT GBB CBG TTT  
 TGG BBC CBT GTT TCC TGT GCG CTC GGC CTG GTC CCG G GGG TCT CTT GTT GTT GC TTG CGC CTC CTG CTG  
 GGG GT CC CTC TGT TCT TGT TTT GGG GGC GGG CCC GGC CGT TGT CTT G GTT TGG GGG TTT CCG TTG GGG TTC  
 TCC TGG CCC GGG CCT TGC CC GGC CGT GGT CCC GGC TTC GTTCCT GTC TCC GTC TCG GCT CTT CTG GGG CCT TGC  
 GCT GTC TTT GGT G GCB CCG TCC BGT GBT GGT GCG GTB CTT GTC GCT GCB GCG CTC GGC CTG GTC CCG GBG BGC  
 GCG GCG GCC GGG GGC TGC TGG G GGT TGG CCC GGG GTG CCC C GCC GCT GGG TGC CCT CGT CTG CGG TC GTG  
 TCT CTT GGC TCT GGT TCC CC GCT GCG CCC GTT GTC CTC TGG GGT GGC CTT C GCT CCG TGT GGT TCT TGT GT  
 TGG GGG TCC CTT TTT GGG CCT GTT GT GGC GTG GCT TGT GTG TTC GGT TTC TGC CCT GTC CTC CGG CGT CCC CGG  
 BGC CTC CCC GGG GCB GGB TGB CTT TTG BGG GGG BCB CBG BTG TCT GGG CBT TGC CBG GTC CTG GGB BCB GBG CCC  
 CGB GCB GGB CCB GGB GTG CCG GCB GCG CGG GCC GGG GGC TGC TGG GBG CCB TBG CBG GGC TGB G CCT CTT TTC  
 TGT TTT TCC C CTC TGC CTT TGT TTG GGT TCG CTT CCT TTC TGC TTC TTC C CTG TGT CTC CTG TCT CCG CTT TTT  
 TCT TC GTC TTT GTT GTT TTC TCT TCC TTG CTG BGC BBG BTB TCT BGB TTC TGG GGT GGT CTC GBT TTT BBBB GCT  
 TGB BBB GCT GCB BBC BTT BTC CBB BGT BTB TTT GBG GCT CCB BGG BTC BCG BCC BTC TTC CCB GGC BTT TTB BGT  
 TGC TGT CGT BBG TGB GBG CTG BGB GBB BCT GTG BBG CBB TCB BBT CTT CBB GBG TTC TTT TCB CCC GTT CTT GGC  
 TTC TTC TGT C CGT TGG CTT CTC GTT GTC CC TGT GGG CTT CTC GTT GTC CC CCC TTC GGG GGC TGG TGG GGC CGT  
 CCT TGC CTG CTG G GTT CTT GGC TTC TTC TGT CCG T TGG CTT CTC GTT GTC CC TGT GGG CTT CTC GTT GTC CC  
 CCC TTC GGG GGC TGG TGG GGC CGT CCT TGC CTG CTG G TTT TCT CTT TCG CTT TCT TTT CGT CTC CTG TTC CTC  
 CTT TT TTG CTG TTT TTT CTC CTT CTT CTC TCC TTT CTT TTC TTT TCT CTT TCG CTT TCT TTT CGT CTC CTG TTC CTC  
 CTT TT TTG CTG TTT TTT CTC CTT CTT CTC TCC TTT CTT TTC CTC TGT CTT GTT CTG GTC CTT CGT GGG GCT CTG  
 TGT CGC GTG G GTG CCG CTC TGG CC GGC GGB CCB GGB TTC GGB GCB GGB GCB GGB GGC GGC TCB TGT  
 TTG GBT CCG CBG GBG GCB CTC CTC TGG TTG GCT TCC TTC GCC GGC BCB TGC TBG CBG GBB GBB CBG BGG GGG  
 BBG CBG TTG GGB GGT GBG BCC CBT TBB TBG GTG TCG B TCCCTGTTTC CCCCCTTTCG TTCTGCGTTT GCCTTTGGCG  
 TTTTGTGTT GTTTTCTCTC TCCGTCTTC TTCTCCCT GTGGGBBTTT CTGTGGGGBT GGCBTBCBG TBGGCBGCTC  
 CBBGBGCTBG CBBBCTCBBB TGCBGBBGB TCCBTGGC TGTBBBGGG TGGGAATTC TGTGGGGBTG GCATACACGT  
 AGGCAGCTCC AAGAGCTAG AACTCAAAT GCAGAAGCATC CTCATGCTC TGAACG GGGGGTGGCT TCCTGCCGCG  
 TCTCTGGGC GTCCGTCCTC TCGGCCCGC GCCGAGCTCG GCTCCTCTCC CTCTGGCCCG GCTCGGGCG GGGCGGGCG  
 GTGGGCGGGC GCGCTGCC TCGCGCGGGC GCTGGCCCT GCTGGCGTC GGTGCGCGC TGCTGCTGC CTGCTGGCC  
 GCGCCGGGGC CTGTCCGCT CTGCGGGCGC TGCTCTCTGG CTTGTCTTCC GGCTCTTCTG CTGGGGTGGG GCTGGGCGG



CGGCCCCGTG CTGGGGCTCC TCGGGGGGGG GGGCTCTTCC GGGCTGTCTC CCTCCGGGGC GGGGGTTTCT GGCCGTGGGG  
GTCTTGCTG GCCTCCGGGC TCCTGCTTGT CTGCTCTTCC TTCTCTGGTC GGTGTGGCT CGGGGCTCCG, TGGGTCCCTG  
GGCCCCGTTT GTGTTTTGTC TTTTCCCTG GCGTCCCTGT GCCCCTCTCC TCTCTTCTCT CTGCTTCTCG CTCTCCTTTG  
TGGGGCCCTC CCTGCTGCTC TTGGTTTTGG GCTTTTTTTC TCTTCTCTCT TTTTCTGTCG TGGGCTCC/ GCACGCCTCT  
TGCCACCTCC TGCGCAGGGC AGCGCCTTGG GGCCAGCGCC GCTCCCGGGC CGGCCAGCAG GGCAGCCAGC AGCGCGCAGC  
CGACGGCCAG CATGCTTCTT CCTCGGCTAC CACTCCATGG TCCCGCAGAG GCGGACAGGC GCBGCGCTC TTGCCBCTC  
CTGCGCBGGG CBGCGCCTTG GGGCCBGC GCCTCCCGGC CGGCGCBGCB GGGCBGCGCB CBGCGCGCBG CCGBCGGCCB  
GCBTGTCTTC TCCTCGGCTB CCBCTCCBTG GTCCGCBGGB GCGGCBGGB C GGGGTGGBBB GGTGTGGBGT BTGTCTTTBT  
GCBCTGCBT CTBBGTTCTT TBGCBCTCTT TGGCBBBCT GCBCTTCBC BCBGBGCTGC BGBBBCTBGG BBGGCTGCCB  
BGBGBGCCBC GGCCBGCTTG GBBGTCTGT TTBCBGBG TBGBGTGGT CTTCCCGGC TTGTGTGCTC TGCTGTCTCT  
TGGTCTCTTC CGGTGGTTTC TTCTGGCTC TTGTCTTTC TCTTGG CCTT TGGC CGGGBTGGG GGTCTGGBC  
GGCBCTGGBB GCBTCCBGG CTCCCTTCC GTCTTCTTG TCCGCTGCC GCBCCCTTC BTTCBGBGG CTBGTGGCT  
CCBCBGGGB CTBGTBTGG TBGBBCTBG GGGCTCGGC TCCTCBGGG BCBTGGCTCT TCTGTCCG CTCTCTCTG  
GGGTTTTCGG TCTGGGTGGG CTTTCTCTCT GGGGCTGCTG CTGGGCTCTT CTTTTGTIT CTGGCCTGGT GCTCTCTCGT  
GCCCTTCCCT TTGGGTGTCT GTTTTTGTG GCCTCCBCCB GGGBCBTG GTCTTTGTT CTGGGCTCGT GCCCCBTCC  
GGCTTCTCTC TGGTCCGTC CTCTGTGGT TTTGGCCCTG CTCTTTTCTT CTTGTGAGG GGGCAGCAGT TGGGCCCCAA  
AGGCCCTCTC GTTACCTTC TGGCAGGAGT GCATCCCCATA GTCAAACCTT GTGGTCTGT CATAGCTCTC  
TGTGTGTTT GAGTTTCCA TCCCGGCTTC TCTGTGTTT CAAGGGAGB GGGGCBGCB GTTGGGCCCC BBBGGCCCTC  
TGGTTCBCT TCTGCBGCG BGTGCBTCC CCBTGTCTB BCTGTGGT CGTGTCTBG TCCTCTGGB GTTTTGGBT  
TTCCBTCCCG GTTCTCTCT GTTTCBGG GB GGGCBGCGG CBGTGGGCG GCBTGTBGG CBBGCTBGG GGGTGTGGT  
TCCBGBBGT BTGGGGBGGC BGTGCBGGB GCGCBGCGG CBGTGCBT GBGGTGBCB GCGBGGCGTG CCGCGGBGBC  
CTTCTGGTB CTTGTGGGB GGCTGTGGB GGGGGTGTG TGTCGCTG GCGGTTCTT CGGGTGTTC TTCTCTGGT  
TGGCCTGCTG CTCGTCTGGT CGCTCCGCTC CCGGTTCTG CTCGTCTGT CGCCCTTCC TTCTTGTG TGTCTCTCC  
TTCTTGTCT CT GBTGTTGTT BCBBBGCBT CBBBGTBGC TTTGCTBTCT BBGGTBCBCT TTBGCBTBT GBBBGGCT  
GTBGGTGBB BGTGTGCTT BCCTTCBCC BGBGTGCB BBTTCBGGBBG TGCCBGGBGB CCBGCGCBG  
TTGGBTCTT GTTTBGBCB BGTBGGTGC TCCGTTGCT TTTGCTTGT GTGCTCTGT GTCTGT TCT CTCCGGTGG  
TTCTTCTCT GTCTTGTCT TTTCTTGG CCTTGGCC CTGGBGCB BBGCTTGGG GCBGGGBGCT GGBGGGCC  
BGGGGGTGG CTCTGCBCT TGTCBGBGT GCBCTGTGCB BCBGCBGCB CTGCBGGGCC BTCTGCTCB TGGGCTCTG  
GGTGGCBGGT CCBGCBTGG GTCTGGGTGG GGCTGGGCTG CBGGCTCCG GCGGTCCBGGCBTGGGTCTG GGGGCTGGG  
CTGCBGGCTC CGGGCGGGCG GTGCGGGCT GCGTGTGCG GGCTGCCCG CAGGCCCTGC GGTCCBGGCB TGGGTCTGGG  
GGCTGGGCTG CBGGCTCCG GCGGGCGGGT CGGGGCTCG TGCTGGGGG TGCCCGGAG GCCCTG CGBCCGCTG  
GBGCCCTGGG GCGCCCTGT CTTCTTGGG BCGCCTCT CTGCBGCTC CCBGCTCCG BTCTGTCTT CBTGTCTBT  
GGTGTCTTT CCBGGGBGB GBGGGGCTG TCCTGTCTG TCCTGTCTG TGCTCTGGT GTCTTTCCG CCTGGGGCC  
CCCCTGTCT CTGGGGCT CTCTCTCTG GGGGCGCT CTCTCTCT CTGCTCTC TCTTTCTC TCTCTCTT  
CCCCTTCCG GTCTTTCTG TCTCGGTGTC TGGTTTCTC TCTCCGCTG CTGCTGTCT GGCCTGCGCT CTGGGCTGT  
GCTGTCTCT CTCGGTTC TGCTCTCT GTCTGTGCG CCTCTGGG TCTCCCTCT GGTGGTGGT TGTGTCTG  
GGCTGGGCTC GTGCTCCB GTGCTCBTG TGTCGCTG GGBGCGCT GCTGGGCTG GTCTCTCTCT  
TGTCTGGT CTCTGTGT CTCTTCCG CTGGGGCCC CTGCTTCT TGGGCTCT TCTCTGGG GCGCTCTC  
TCTCCCTCT TTGCTCTCT CTCTTCTCT CTCTCTCT CCTTTCCG CTCTTCTCT CTCGGTGTCT GGTTTCTCT  
CTCCGCTGG TGCTGTCTG GCCTGCGCT TTGGCTGTG CTGTTCTCT TCCGGTCTCT GTCTCTCTG TCTGTGCCC  
CCTCTGGGT CTCCCTCTG CGTGGTGGT TTGTGCTG GGCTGGGCTC GTGTCTCB GTGCTCBTG TGTCCGCTGB  
GGGBGCGTCT GCTGGC CTGCTBGGC TTGGGTCTCC GGGCBTCT CTGCBGBGB TGCTCBGGG GCTCCGGCBG  
TTCTCTCTG BTCTGGTCT GTCTBCCB TCGGBCCBT BBTTCBGBT BCBTTGGCT CTBTCTCT CTGCBBCB  
CTGBGTGGB BCBGBBBB BGBCTGCCB GCGCBGGB BTCTCTGT TGGTTTTG GBCGBCBGT CCGCGGCTG  
GCTGAGTTTCT TCTGGTCT CCBGCGCB GTGGTCTG CGGTTTCT TGGTCTCT GGTCCCGCG GGTCTGTCT  
GGTCTGTCT GTGGCTTGG TCTCCGGCG GTTCTCTCT TTTCCG CGGCCCTCT CACTGGAGG ACCGGGAGT  
CTCCATGGG AGGGTTGGG TTGGCGGGG CTGCGGGT CCTCTCTG GCTGGTCTCT GTTGTCTT GGGCCCCG  
TCCGCTGCT CGGCTCCG GTTCTTGGC CTCTGTCT CCTGTCTG TTGTCCTG CCTCTCTG TTGCTTTC  
CTCTCTCT TCTTCCAGG CTCTCTCG TCCGCTGT GGGGCGCG CCGGGGGGG GCTCGGCTC GCGGCTCT  
CCCCGCTGG GGGGCTCTG TCTCGGGG CTGCGGCTG CGGGCTGGG GCTGCGTGC CCGCGCGCG GTCCGCGGT  
GGGTGGGCT GTCCCGCGT GGTGTGTCT CGTCTCTG CTGCGGCTC CTGGTCTG CCGGCTGCTG TGTGGCTGT  
GGGGGGCGT TGGTGGCTG TGTGCGCGT GGGGCTCG GCTCGGGCT GTTCTGCTC CTGCGGCTC TGTGGCTC  
GGGGCTCTC GTTTCTGCT CTGCGGTGT CTCTCTCG GTGTGGCCC GGTCCCGG CTGCTGGG TGGGCGGGT  
CGTGGCTG GGCTCTGGC CGTCTGGT GTCTGTGCT GCTGTCTG GTTCTGGC CTCTGTCTG GCGCTTCTC  
TGCTCTCTG TCCGCTCTG TGGTGGCTG GCTGGGGG CCGGTGCGG GGTGGGTGT GGGGTCTTC GGGTCTCTC  
CCTTCC GTT TCA TCT TGG CTT TAT CCTCT CCC CTT GTT CCT CCC CTCT CCT GCT CTG GRG TCT CCT C TTC CCT  
CCC TCC CCT GCC GTG TTG TCT GTG GGT GTC GTT TCG CTC TTG TTG CCC TGG GCC CTT CCC TGC TGG GGG GGA GTT  
TCA TCT TGG GTT TCB TCT TGG CTT TBT CCTCT CCC CTT GTT CCT CCC CTCT CCT GCT CTG GRG TCT CCT C TTC CCT  
CCC TCC CCT GCC GTG TTG TCT GTG GGT GTC GTT TCG CTC TTG TTG CCC TGG GCC CTT CCC TGC TGG GGG GGB GTT  
TCB TCT TGG GGG GGB GTT TCB TCT TGG CTT T CCGTGTGTC BGTGGTGTG CCCGTTTGB GTBTGGCGT  
CCBCCBTTCT CTTTCTCT TTGTTTCCG TTCTCTTG CGTCTGTGT T GCTCAGCTC CAAAGGAGCC AGCCTCTCCC  
CAGTCTCTGA AATCTGAGT GTTGCCTGCC AGTCGCCATG AGAATCTCT ACCTCTGCT GTTACTCTC TGCTTACTT  
TGTCTGAGT GGCCTCAGG GTTAATTTT TCACAGGCT TGGCCACAGA TCTGATCATT ACAATTGCGT CAGCAGTGGA  
GGGATATGTC TCTATTCTG CTGCCGATC TTACACAAA TTCAAGGCAG CTGTACAGA GGAAGGCCA AGTGCTGCA  
GTGAGCTGGG AGTGACCAGA AGAATGACG CAGAAGTAA ATGAACCTTT TATAAGCATT CTTTAATAA AGGAAATG  
CTTTGAAGT AT ATCTTTAAG TCAATGGACT TTGCATCAGT CACACCATCT TTTGTTACTT TGGACTTCCC CAGCTATGT  
CAATAATTAC TGTCTTCCC TTGGGCCCCA TTGTAATGGC TACAGCTCG ACAAAAAGTC TACACTTTGA AGCATTAAAG  
CTCGGACATC AGACCAAAT TTTACATCT TACCATCACT TCAAGTGAGG TGAGGAGCCA GTAGCCTGGA CACTGGTCTC  
ATCTGGTGAA AGACTGTGG TAATGGAAGC ATTTCTGTG GGTGCTGGCA GGACATGTC ATGGCGAGGC AGGTATCAG

CAGCAAGTGA GAGCTGCCTC TTA CTTTCTA AAGGTGACAT AGCAAATATA CAAAAAAAAA TAAATAAATT ATTAATTTAG  
GTAGAGCACA TAAAGGCTTT ATTTTCATATT CCATTTCTCT GTATGCTTTC TTCACCAGGA AGAAATAGTT TTAGTGTCAG  
GAATGAATGA GTCTGCCCCT CAATTCCAGC CTGCTCAACA CACAAGGAAA CAAAGCCCTG ACAATCAGAG TGA CTTCCCTG  
GTGACTAAGC TCCCAGTCCT GGATGCATAT TGT TTTAGCA GTTCTGACAG CATTGACCC AGCCCTCTCT CTGCATATCC  
CATCAGAACC TTCTTTTTTT TTTTTTCTT TGAGACTGAG TCTTGCTCTG TCGGAAGCGA CTCCTGTGCC TCAGCCTCCC  
AAATACCTGG AATTATAGGC GTAAGCCATC ATGCTGGCT AATTTTTGTA TTTTTCATGG AGATGGGGTT TTGCCATGTT  
GGTCAAATTG GTCTCACACT CCTGACCTCA TGTGATCCAC CTGCTCAGC CTCCCAAATC GCTGGGATGA CAGGTGTAAG  
CCACCATGCT AGGCTCAGAA ATTTCTTTT ATAAAAATGT CATTAAAGGAT CTTGGCTGCA CAATATCGTT ACCAGCTTCC  
TTTAAATCCA CTTCTGGCCT GCCAGGAATC AGGTCTTCA GAACCTGACA TTTTAAATGA AGAGGTCAGG CAGTTTCATGA  
GGAAAGCCTC ATTGTCCCA TGTCTCTGTC ACTGCTGCAC CCTGAGACA TCACAGACAT GGACACTGGG GCCTGCTTGT  
TTCTCAAATC GCCCTTAGAT CGAAAGAGGG AGGAACCAGG ATGAATGCCA CTCATTTTCC CAAGAAAGGC CCTCTCCTGA  
GTGCCGGGA TGGGCTCTG TCCATTGCTT GGGGCCGCA ATTGCTACTC TGGGTTACGG AGGAAGGACA GGGTCTGAG  
AGACACAGA GACCTCACAC AGCCCTGAAA ACATGGGGCT CTTCTAAG TGTTCCTT CACCAACAGG GAGACCCTG  
GGAGGCTTG CAGCCCCACT CGGTGCTTCT CCACCAAATC CCAAGGGCAG TGACGCTGAC GTCTGTGGA AGCAGAGAAA  
GCCCTGGCTC CCAAAGCCCT GAAGTCCCTG TGGAGCTGAC ATTCCCTGAG TGACGGTGTG AATGGAAGGA ACTCAAGTGC  
GGGTGTAGG CCACCTCTG GCCAGGCCT GGGTGAATC TGAGGGGACA CATGTAGTCA CAATCCCATC CTCCCATTCT  
CCTTCTCAGA GGAAGGAAGT GGGCATCCAT CTGCTCATC TCTCTCCGT GGGGAAGATG GGGAGTTTCA GGGGAACCTT  
CACATAAAT TACCAGCTC AGATCTCTG TGAGGATGGG GCCCACCATG CTCCCGGTG TGCCAGAGGC CTGAGCCCC  
TCCCAGGGT CTTGGGTTG AGCCAGCCT GTATCATCC CAGGAGCTGA ATGTCAGAG AATGGATAGA ATTAGATGGA  
AAGAGCTCTC AATTGACCT GAGACTGTCC CCAGATACTC AGGAAAAACA GGACGTGCA CAGAGTGGG AGGAGTGA  
TGGCAGGTTA TAGGTCTGA GTTTGAGTTT GTTCTACGT GAGACAGACC CAGCCCCCTCA CTCCATTAC ACTGCGGT  
TTAAATGGT CAAGATAGGA GCAATTTTCT GTTCCCAAGA GCAGGAGGAA GGGATTTTCT GGGGTTTCT GAGTCCAGAT  
TTGCATAAGA TCTCTGAGT GTGCATTGTT CTTTGAGGAC CATTCTCTGA CTCACCAGGT AAGTGGCTGA ATTCTAACCT  
CTGTAATGAG CATTGCACCC AATACCAGT CTGAACCTA CTTGGTGACC AGGGACCAGG ACCTTTATAA GGTGGAAGGC  
TTGATGCTCT CCCCAGACT AGCTCTGGT GAAGTCCCA CCATCAGCC ATGAGGGTCT TGTATCTCT CTCTCTGTT  
CTCTTCATAT TCTGATGCC TCTTCCAGGT GAGATGGGCC AGGGAATAG GAGGGTTGGC CAAATGGGA ATTGGCTAG  
AAGTCTCTG TCTCTCTCA TCCCCTCCA CTTATCTCTC CTTATCCCT CTCTCTCTT CTCTCTCTG TGTGCCCCCT  
CCATCTTTT CTCTGCTTCT TCTCTCTCT TCTCTCTCT TCTTTTTTCT GTCTTTCTT TCTCTCTCT CTTAGAGCAT  
GTCTTTCTT CTTTCTCTT CTTTCTTCT ACCCACACT TTAGACTGAA TGCCCTATT AATTGAACAA AGCATTGCTT  
CTTCAATAG AAAAGGAGT TGAGAACCCA ATGGACACCT CACTCGTTCT TCTAAGCCAA TATGAAGGAG CCCAGTAGCT  
TGTAAATATC ATCTCTTAC TGTCTTCCAT GCTACAACT CTGAGACTAT GGTGAAACC TGTTAGGTGA CTTTTTAAAT  
AAAAGGCAGA AATTTTGATT TTATCTAAAG AAGTAGTAT AGAATGTCAT TTTCTAATTT TTTATTTTA AAGGCTAGAT  
ACTGCAACCT AGAGAATTCC AGATAATCTT AAGGCCAGC CTATACTGTG AGAACTACTG CAGCAAGACA CTCTGCCTCC  
AGGACTTTT TGATCAGAGG CCTGAGAAC AGTCCCTGCC ACTAGGCCAC TGCAGGTTC CAGGACAGG TACAGCCCAT  
TGAAACCTAC TTTTAAACCT GGATGCCTAA CTTTCAATTT CTCTTGATA TTATGAAAAT AAAATAAAAA CCATGAAAGG  
ATAAAGAGG GAGAGTGGAA GGAAGGATG GAGAAAGGA AAAAGAAAAT TTGAGAGTAA ATCTAAAAAC  
AATTAATCTA ATAGATATCA TCTTGTAAT TCTCATTTT ACCAATCTTA TTTATGAGTC TGGGTTTTG TGAGAACAAT  
GGGTTCTGA GAGGCACCAG AGACCTCATG TTTTCCAAAA CTTGAACAG TATAATGAAG GAAGGCGGGG AGGAGGAGG  
GCAGGAGGC AGGGAGGCAG GGAGGCGGGC AGGTGGGGAG GGAGGGACGG AAGGAGGGAG GGAGGGAGGG  
AGGGAGGGAG GGAGGGATAA AAAAGAAGA ATGAGGTGA AACCAGGACT TAGATATTAG AAACAAGCCA TTACAAAATT  
TATTTCTATG GTTAATTGTG GTTTTCAACT GTAAGTTACT TGGTGTAAAT TTCCTATTAA ACAATTTTCA TAAGTGCAT  
CTTTTATCC CATCTCAGGT CAAATACTTA ACAGACTAAA TGATTTGAAA AAGCAAAAGT TTAGTGGCTT GTGTGTGTTA  
AAATGGAGGT ATGGTGGCTT TGATATTATC TCTTGTGTG GGAGCTGAAT TCACAAGAGA TCGTTGCTGA GCTCTACCA  
GACCCACCT GGAGGCCCA GTCACTCAGG AGAGTACAGG GTCTTTCACA ATCAGGTTCT ACAAATAAAT ATGCAAAAGC  
AACACAGCA GTGCCAGTT CCATGTCAGA AACTTAGATC CAAATGACTG ACTCGCTCT CATTATCATG ATGGAAAAGC  
CCAGGCTGA GAAAGAAGCC CGCTGCGGAT TACTCAAGG CGATACTGAC ACAGGGTTTG TGTTTTTCCA ACATGAGTTT  
TGAGTTCTTA CACGCTGTTT GCTCTTTTG TGTGTTTTT CCCTGTTAGG TGTTTTTGGT GGTATAGGCG ATCTGTTAC  
CTGCCTTAAG AGTGAGGCA TATGTCATCC AGTCTTTTG CCTAGAAGGT ATAAACAAAT TGGCACCTGT GGTCTCCCTG  
GAACAAAATG CTGCAAAAAG CCATGAGGAG GCCAAGAAGC TGCTGTGGCT GATGCGGATT CAGAAAGGGC TCCCTCATCA  
GAGACGTGCG ACATGTAAAC CAAATTAAC TATGGTGC ACAGATACGC AATCTTTATC CTAGTAAATG TGTCATTGG  
GTGATGTTGG TTTGGGAGG CCATCTCTAA TATCTTGAA ACACCTTTT CTGCTCTCCA GGAAGGGGTC AGGGCTGCCA  
CAGCGGGGCT TGGAGTGCTT TCCAGGGTCA CAGGCATCTG TATTCTTTGG ATTCTTGAC CTTCCCCATT TATCCCGGC  
ATTTCTCTAA AACGTGTGCT TTGCTCTCC TGCATCTCC CCTGCTATC CTCACCTAC CCCACATCTT CCTAAAAA  
AGCAAGCCCA ACTCAAAGAC CAGTCCCTC ATGGAATCAT AGTGGATCTG CCAAGGGAGG GGATGCCAG TCTCTGTTT  
TTCACAAGAC TCCCTTCTT TGGCTAAGGT TTCTTAGCA ATTAT CTGAGTGGT AAAAAGATT TATATCTGCT  
GTTTGTAGAA TGCAGACCC ACTAGCCACA TAGTGTCTGT GAGCACTTG C AATGCGGCTA GGGTGATTTC AATTAACCTA  
AAAGAGAACA GCCACAGGA GCATGTGGCT GCCATATTGG ATGGTGTGCT TTTGAGAACA AATGAGAGA AATGAAGCCT  
CTATTTACCT TGGTTGGCGG AACACATTGA AGGACTCTG TATTGATACC AGGCTTCAA CTTTGGGAAG TGTACTGGCC  
AACTTAAACA CATCCACAGG AGAATGAAGA GGTGTTGGAA GGGACCAGAA ACCAGGCATT GAGGACAATG AGAAGAGTTT  
TTCAAAGTG GAATTACTGC AAAAGTGGA AAAATAGCCT TTGGATGGAA GTTACTGATG AGACAATTTT CATCGGTGTG  
AAAGCCATCT TTCAAACAGA GATCTGCAAC ATGAGAATGT ACTGTCTCT AGGGTAGCGA TGGCCTCTT TATTAGTCCG  
CTCAGGCTAC CAGTTTATC GTTAAACTG CCCATAACA TCCAGGCGAG TTTAAACAAC AGAAATTTAT TTCTCGCAG  
TCTGGAGGC AGGAAGTCTG CGATCAAGGT GGAAGCAGGG TGGCTTCTT CTCAGGTGTC TGTCTTGGC TGTGATGA  
CGCGCGCTC CTGGGCTCT CACATGGTCT TTCTCTGTG TGTGTCTGTC CCAATCTCTT CTTATAAGGA TGCAAGTCTT  
ATGGATCAGA GCACACCCCA ATGACCGTGT TTAATTGAA TCACCTCTT AAAGTTTCT TCTCAAATA CAATCACCTC  
CTGAGGCACT GTTAGGGCT CGACACAGGA ATTCTTTTCC TAGGGGATT AGTTCAGTCC AAAACGCCTA CCAGTGGAGA  
CTTGCAACAT GCGGCGCTG TGGTCCCTG CCAGGAATAT CACAGGCGAC TGTTCCTGT TGCATGGAAT AGAAGGCTAT  
TCCAGAGTAC TGTCTTATT TATCAGATCT GGGATACTG GAGAAGGGCA AAATAAAGTC CAAGTAGAAA AAAAACTAT  
GAAAGTTTTA GAGAGTAACC ATAATTTTCA CCCGATGTGA AACGATCTTA GATTTCAGCT GAAATAGTGA TGTGGGAAGT



GAGGGGGCCG GGATTCAAGG CAGAGGGAAC AGCGTAACTG AAGGCATGGA AGGAGGGGAAG TGTAGGCTGT GTTTGAAGAG  
TGGCAGCTGC TTCCACATTT CTAACACACA GGATGTGATT TTGGGGTGTG TTGAGACAAG GCAGAAAACT GTTTTGAAAA  
AATAACTTGA ATTCCTGCA CATTAAAAAT CTCTCAGCAG AAGAAAAACC CACTCAGAAC CCCACTGTTC ATTCCTTGGC  
TTGTATTTGG SCACAGCTGG CATAGCCCCA GACTGAGTAA GCTCTTCAGA CACCTCATTT CATGAGTAGC CCCAAAGATC  
AATCATGGGC CAATTTCTTG GAAGAGAAGA CTCTCCGGTG TTTTGCAGTT ATTTGTCTG CTTTCGGGAG ATGTTCTCAA  
ATCGTTGCAG CTACAAGCCA TGAGTCTGAA GTGTTTGTGT TCCCTCCTTA CAGGTGGTAA CTTTCTCACA GGCCTTGGCC  
ACAGATCTGA TCATTACAAT TGCCTCAGCA GTGGAGGGCA ATGTCTCTAT TCTGCCTGCC CGATCTTTAC CAAAATTCAA  
GGCACTGTT ACAGAGGGAA GGCCAAGTGC TGCAAGTGAG CTGAGAGTGA CCAGAAGAAA TGACGAGAA GTGAAATGAA  
CTTTTATAA GCATTCTTTT AATAAAGGAA AATTGCTTTT GAAGTATACC TCCTTTGGGC CAAAATGAAT CTTGTGTCTC  
AATTGGAAGA GGTAAAGAAG TAGGGGGTTA GGGTGCATGG GTTGAACGT GAGACAGGTC GAACCACAAA GCCTGCCTGG  
AAAAGGGGAG TGACGCTCTA GGCTTCAGTG ATGTACCTC CACTTTGTTT GATCCACAAA CCAACAGGTG ACTGATTTTG  
GTCAGCTCAG CCTCCAAAGG AGCCAGCCTC TCCCAGTTT CTGAAATCCT GAGTGTGGC TGCCAGTCGC CATGAGAACT  
TCCTACCTTC TGCTGTTTAC TCTCTGCTTA CTTTGTCTG AGATGGCCTC AGGTGGTAAC TTTCTCAGC GCCTTGGCCA  
CAGATCTGAT CATTACAATT GCGTCAGCAG TGGAGGGCAA TGCTCTATT CTGCCTGCC GATCTTTACC AAAATTCAAG  
GCACCTGTTA CAGAGGGAA GCCAAGTGCT GCAAGTGAGC TGGAGTGAC CAGAAGAAAT GACGAGAAAG TGAAATGAAC  
TT GAATTCACAT TTCTCACCTT TTGATGTATT AAGAAAGTAT GGAGAAATAT ATCCTCTATC AAATTTTCAT GCCTTCAATA  
ATTTCTAATT CATCAGTCAG TGTTTTTCCA TCCTTTACTG TGATGATGCC CTTTCTTCCA AACTTTTCA TTGCATCAGA  
GATGATGTTA CCAATTTCTT TGTCTCCATT TGCAGAAATT GTAGCAACCT GTGCAATTTT TTAGGTTTG GTCACAGGTT  
TAGACTGCTT TTTAAGTTCA GCAATTACAG CATCAACAGC TAACATCACA CCTCTCTGA TTTCCACTGG ATTAGCACCT  
TTGCTAACCT TCTGGAAGGC TTATTTGGAA ATAGAGCATA CCAGTACAGC AGCAGTGATA GTGCCATCCC CCAGTCTCTC  
CATTTGTGTT ATTTGGCAACA CTTTGGACAA GTTTAGCTCC AAGTCTTTTA TATTATCCT TTAAGTCAAT TGACTTTGCA  
TCAGTCACAC CATCTTTGT TACTTTGGGA CTTCCTCAGC TATGTTCAAT AATTACTGTT CTTCCCTTTG GCCCCATTGT  
AATGGCTACA GCATCGACAA AAAGTCTACA CTTTGAAGCA TTAAGGCTCA GACATCAGCA CCAAATTTTA CATCTTTACC  
ATCACTCAA GTGAGGTGAG GAGCCAGTAG CCTGGACACT GGTCTCATCT GGTGAAAGAC TGTGGGTAAT GGAAGCATT  
CTGTGGGGTG GTGGCAGGAC ATGTGCATGG TGAGGCAGGT CATCAGCAGC AAGTGAGAGC TGCCTCTTAC TTTCTAAAGG  
TGACATAGCA AGTATACAAA AAAAAATAAA ATATTAAATT AGGCAGAGCA CATAAAGGCT TTATTTTCA TTCCATTTCT  
CTGTATGCTT TTTTACCAG GAAGAAATAG TTTAGTGT AGGAATGAAT GAGTCTGCC CTCAATTTCA GCTGCTCAG  
CACACAAGGA AACAAAGCCC TGACAATCAG AGTGACTCCC TGGTGAATA GCTCCAGTCC TGGATGCATA TTTGTTTAGC  
AGTTCTGACA GCATCTGACC CAGCCCTCTC TTTGCATACC CCACCAGAAC CTTCTTTTTT TTTTTTTT TTTGAGACTG  
AGTCTTGCTC TGTCGGAAGC GATTCCCGTG CTTGAGCCTC CCAAATACCT GGAATTATAG GCGTAAGCCA TCATGCCTGG  
CTAATTTTTG TATTTTTCAT GGAGATGGGG TTTTGCCATG TTGGTCAAAAT TGGTCTCACA CTCCTGACCT CATGTGATCC  
ACCTGCCTCA GCCTCCCAAA GTGCTGGGAT GACAGGTGTA AGCCACCATG CTAGGCTCAG AAATTTCTT TTATAAAAAA  
GTCAATAAGG ATCTTGGCTG CACAATATCG TTACCAGCTT CTTTAAATC CACCTCTGCG CTGCCAGGAA TCAGGGTTCT  
TCAGAACCTG ACATTTTAAA TGAAGAGGTC AGGCAGGTCA TGAGGAAAGC CTCATTGTCC CCATGTCTCT GTCAGTCTG  
CACCCCTGAG ACATCAGCA CATGGACACT GGGGCTGCT TGTCTCTCAA ACTGCCCTTA GATCGAAAGA GGGAGGAACC  
AGGATGAATG CCACTCATTT TCCCAAGAAA GGCCTCTCC TGAGTGCCCG GGATGGGGCT CTGTCCATTG CTTGGGGCCG  
CCAATGCTA CTCTGGGTTA CGGAAGAAGG ACAGGGTCTT GAGAGACACC AGAGACCTCA CACAGCCCTG AAAACATGGG  
GCTCCTTCAT AAGTGTTCCT CATCACCAAC AGGGAGACCA CGTGGAGGCC TTGCAGCCCT ACTCGGTGCT TCTCCACCAA  
ATCCCAAGGG CAGTGACGCT GACGTCTGTG GAAAGCAGAG AAAGCCCTGG CTCCCAAGC CTTGAAGTCC TGTGGAGCTG  
ACATTCCTG AGTGACGGTG TGAATGGAAG GAACTCAAGT GCGGGTGGTA GGCCACCTCC TGGCCAGGC CTGGGTGAAC  
TCTGAGGGGA CACATGTAGT CACAATCCCA TCTCCCAT TCTCTCTCA GAGGAAGGAA GTGGGCATCC ATCTGCCTCA  
TCTCTCTCC GTGGGGAAGA TGGGGAGTT CAGGGGAACT TTCACATAAA TTTACCAGC TCAGATCTCC TGTGAGGATG  
GGGCCCCACA TGCTCCCGGT GCTGCCAGAG GCGCTGAGCC CCTCCAGGGT CCCTGGGTTT GAGCCAGCCC TGTATCATCC  
CCAGGAGCTG AATGTCCGAA CAATGGATAG AATTAGATGG AAAGAGCTCT CAATTTGGCC TGAGACTGTC CCCAGATACT  
CAGGAAAAAC AGGAGCTGCG ACAGAGTGGG CAGCAGGTGA GTGGCAGGT ATAGGTCTG AGTTTGAATG GTTCTACAG  
TGAGACAGAC CAGCCCTC ACTCCATTCA CACATGGGT TTTAAATGGT GCAAGATAGG AGGAATTTT TGGTCCCAAG  
AGCAGGAGGA AGGGATTTT TGGGGTTTCC TGAGTCCAGA TTTGCATAAG ATCTCTGAG TGTGCATTGT TCTTTGAGGA  
CCATTCTCT ACTCACCAGG TAAGTGGCTG AATTCTAACC TCTGTAATGA GCATTGCACC CAATACCAGT TCTGAATCT  
ACCTGTTGAC CAGGGACCAG GACCTTTATA AGGTGGAAGG CTTGATGTCC TCCCAGACT CAGTCTCTG TGAAGCTCCC  
AGCCATCAGC CATGAGGGTC TTGTATCTCC TCTTCTGTT CTTCTTCTA TTCTGATGC CTCTCCAGG TGAGATGGGG  
CAGGGAAATA GGAGGGTTGG CCAATGGAA GAATGGCGTA GAAGTCTCT GTCTCTCTC ATTCCTCTC ACCTATCTCT  
CCCTCATCCC TCTCTCTCT TCTCTCTCT GTGTGCTCC TCCATCTTT TCTCTGCTT CTCTCTCT TCTCTCTCT  
CTCTTTTTT CTGTCTTCT TTTCTCTCT TCCCTAGAGC ATGTCTTCT TCTTTCTCT TTCTTTCTT CTACCCACAC  
TTTTAGACTG AGTAGACTGA ATGCCCTATT TAATTGAACC AAGCATTGCT TCCTTCAATA GAAAAGGAGT TTGAGAACCC  
AATGGACAAC TCACTCGTTC TTCTAAGCCA ATATGAAGGA GCCAGTAGT TTGTAATAT CATCTTCTA CTGCTTCCA  
TGCTACAACT GCTGAGACTA TGGTTGAAAC CTGTTAGGTG ACTTTTAAA TAAAAGGCAG AAATTTTGAT TTTATCTAAA  
GAAAGTAGTA TAGAATGTCA TTTTCTAAAT TTTTATATT AAAGAGTAGA TACTGCAACC TAGAGAATTC CAGATAATCT  
TAAGGCCAG CTTACTGT GAGAACTACT CAGCAGACA CTGCCCCC AGGACTTTT TGATCAGAGG CCTGAGTAAC  
AGTCCCTGCC ACTAGGCCAC TGCAGGTTCA CAGGACAGG ACAGCCCAT TAAACCACT TTTAAACCTG GATGCTAAC  
CTTCATTTT TCTTGATAT TATGAAAATA AAATAAAAC CATGAAAGGA TAAAAGAGG AGAGTGGAA GGAAGGATGG  
AGAAAGGGAA AAAGAAATTT TGAGAGTAAA TCCTAAACA ATTAATCTAA TAGATATCAT CTTGTGAAAT CCTCATTTA  
CCAATCTTAT TTATGAGTCC TGGGTTTTGT GAGAACATG GGGTCTGAG AGGCACCAGA GACCTCATAT TTTCCAAAAC  
CTAGAACAGT ATAATGAAGG AAGGAGGGA GGAGGGAGG AGGGAGGGA GGAGGGAAG AGGGAGGGAG  
GGAGGGAAC AAAAGAAGA ATGAGGTTGA AACCAGGACT TAGATATTAG AAACAAGCCA TTACAAATTT TATTTCTATG  
GTTAATTGTG GTTTTCACT GTAAGTTACT TGGTGTAAAT TTCTATTAA ACAATTTTCA TAAGTTGAT CTTTCTATC  
CCATCTCAGA TCAATACTT AACAGACTAA ATGATTGAA AAAGCAAAAG TTTACTGGCT TGTGTGTGT AAAATGGAGG  
TATGGTGGCT TTGATATTAT CTTCTGTGG TGGAGCTGAA TTCACAAGAG ATCGTTGCTG AGCTCTGCC AGACCCACC  
TGGAGGCCCC AGTCACTCAG GAGAGATCAG GGTCTTTCAC AATCAGGTT TACAAAAATA AACATCCCCC AAACCACAGC  
AGTGCCAGTT TCCATGTCAG AAATTAGAT CCAATGACT GACTCGCTC TCATTATCAT GATGGAAGG CCCAGGCTTG

AGAAAGAAGC CCGTCTCGGA TTTACTCAAG GCGATACTGA CACAGGGTTT GTGTTTTTCC AACATGAGTT TTGAGTTCTT  
ACACGCTGTT TGCTCTTTTT GTGTGTTTTT TCCCTGTTAG GTGTTTTTGG TGGTATAGGC GATCCTGTGA CCTGCCCTAA  
GAGTGGAGCC ATATGTCATC CAGTCTTTTG CCCTAGAAGG TATAACAAA TTGGCACCTG TGGTCTCCCT GGAACAAAAT  
GCTGCAAAAA GCCATGAGGA GGCCAAGAAG CTGCTGTGGC TGATGCGGAT TCAGAAAAGG CTCCCTCATC AGAGACGTGC  
GACATGTAAA CCAAATTAAT CTATGGTGTG CAAAGATACG CAATCTTTAT CCTAGTAATT GTGGTCATTG GGTGATGTTG  
GTTTGGGCAG GCCATCTCTA ATATCCTTGA AACACCTTTT TCTGCTCTCC AGGAAGGGGT CAGGGCTGCC ACAGCGGGGC  
TTGGAGTGC GAATCCCTG TAAGCCCTGT TACAGGGGCT GCACCCAGG TACAACCTGA CCTGTGTCCA AGGCGGGCAA  
CTCAACCTT AGATATTGAA TGGGTCCCAT GGCACCAATG CTAAACACC AGCAGCCCTC ACAACCACAG ATCGTGTCTT  
AAGGATGAGG AGGTAGTTCT CTGGATGCAC AGGCTTCAAT CCAAATGGGC TCATGACGCC GCAGCACACA CCCAGTCTGC  
AGCCTGAAGA GTTGGAGCAT TGCAATCACA GAAAGCATCC AGACATGATC ATGGGCTCAG GGATACACCT GTTCTCCGAT  
GTGTACCAGT GAAGGATGGA AACTCCTATG CCTCCAGAA AGCACCCTC AAGCTTTTGC TGAATGCTC TCTGAAGGCC  
CACAAGGCTG AGAGGCTGTG CAACACCAGC AGTAAAGTGA ATGCCACAG TCCACCTCC TTTCTTGGGT GGCCATCTGG  
AAAGGCCACT CCCACCTGA TGGCTAATGC CTCAGACCAG TTCTTGGCCC AGATGATCCT AGACAATTGT TTAAGCTTAA  
ACTGTTTCAAT GGCCAAGCAA ACAGGTGATA GTACCTCTGG GGAACACAT GCCGCGTGA CATCCAGATC TCAGGAGAA  
CCAAAAATGT CTGTTCCACA TAGCAACAGA AGCCCAGGTA GCACTCAGTC TCACCTGGGT GTTCTGCAAC ATCCCAGCTC  
AGCCAAATGG CTTTCATTAG TTTTATGGT TAGACCCAG GTCCTCGGGA CACTGCTTTA GAAACACATT CCAAATCCTC  
CTCTGTGTC AGGTGGCATT CCTATCCCAA TCTCTTGA GGGCGTATAC TGTGATACG AGCCAGGCTG TCCAGAGGC  
CTTAAATATT CCCTTGGTGC AGGTAGTTCA GCTTAGCCAC AGCCAATGCA TCACAGGGTC AACTGTGTTA GGAGCCATTG  
AGAATCCATA GTTGGTTGCT GCCTGGGCTT GGCCAGGGCT GACCAAGGTA GATGAGAGGT TCCTCTGTGG AGTTCTACTT  
TAACCTCACC TTCCACCAA ATTTCTCAAC TGTCTTGGC ACCACAATTA TTAATGGAC CCAACAGAA GTAACCCCGG  
AAATTAGGAC ACCTCATCCC AAAAGACCTT TAAATAGGGG AGTCCACTT GTGCACGGCT GCTCCTTGT ATAGAAGACC  
TGGGACAGAG GACTGCTGTC TGCCCTCTCT GGTACCCCTG CCTAGCTAGA GGATCTGTAA GTACTACAAA ACTTAACTT  
TACACTGAGT TTTTCATTG GAAGCTATGC CTCAATCTG ACCTCTGACT GTGGGGCCGC CCCAGAGGGA CCCAGCGGGT  
GAATCCCTGC TAGGAACGTC TGTCGGGACC TCTGGTGA CTGTTGGGACG ATGGCTTCCA GCTAACTTAA TAGAGAACT  
CAAGCAGTTT CTCTTAAAT ACACATGTCA CATGTCCTGG TTGACATGTC CAGTAAGAAG ACTATCACAG GTCTTTGGAA  
CATTCTTTG AGAGAACTT ATTTAGGCTC TTGGTCTGT TTTCAATCAG GTTGTGTGAT TTTTGTATT GAGTGTGTTG  
AATTCCTTAT GTATTCAGAT ATTTGCCCC TGTGCCATGT AGGTTTGTGA AATATTTTCT CTCATTTTCT GGGTATCTT  
TTCACTCGGT TGATTGTTT CTTTGTCTG CAGATGCTT AGCGTTAAAT GAAGCCACAC TTGTCTATT TCCTTTTAT  
TGCTGTGCC TTTGGTGTCA TAGCCAAGAA ATCATTACCT ACATCAATGT CAAAAGCTT ATCCTTCTAT AACTTCTAG  
TAGTTTATGG TTTCAATTG TACATTAAG TTTCAATTC ATTCTGAGT GATGTTCTA CATGGTGTGA GATAAAGATT  
TAAATACATA CATATATAA ATCATGAGGT AGTGTACACT ATAAATATAC AATTGTTAAT TGTACTCAA GTCTAAGTAG  
AGGTGGAAT AATAAATTT CTTTTTTTA CTTAAACCAC TCTGTGTCAC TGAGCTGATT TCACCTTAG CCTGATAAAA  
TCATTGTCT CTCCACCCTG ATTCCTACAG GAGACTACT ACCCCATAAC CTCAAAAACC TCTCATGAG GATGGTAAGT  
CACCTGAATC CTGAAGTGAA TTAAGTGCTA TTCCATTGGA ACTCATATAG GACACCAGAA TCTAGACCTC CAGAGAACAG  
CAGGACCCAT CTTACAGAAA TAAGAAGCAT TTGTTCCCTG AGCCTGTTGA ATCAAAGTGC AATTTCTATT CTTTGGAA  
TGTTAAAAAG TGAATCATAA TATTTAAGCA GGTGAACCCA CGAGTAACAT AGCAGGGTCT TTCTGTGAT TATTAGCTCC  
AACCTAGCAC AGACATTAAG GGTACAGATG TATACTAGCA TGAACTGGG AGAACAGGAG CATTGAGCA ACCTGAGAC  
CAATGGGCTT CTCTATAAA ATGCACACCT CCTCTACTG AGATTGAGGA AGGTTTCTT TCTCCGAGCC TTCTCCAGT  
AGAGCTATA ATCCAGGCTG GCTCCTCCCT CCCACAGAG CTGCTCCTGC TCTCCCTGC CCAGGTGACC CCAGCTAGA  
GGACCTCGC CATCTTGTG GCAATCTCC TGGTGGCCT GCAGGCCCCG GCTGAGCCAC TCCAGGCAAG AGCTGATGAG  
GTTGCTGAG CCCCGAGCA GATTGCAGCG GACATCCAG AAGTGGTTGT TTCCCTTGA TGGGACGAAA GCTTGGCTCC  
AAAGCATCCA GGTGAGAGAG GCAGGCATGC AGAGCTGTA AGTCTAGAGG GAAGGACGGG AGAGAGGTT CAGAGTTGGG  
TCTCAGCAGT CTATGTCAT GAGGTGGCT CACTAGAAT CTCTGGGCAT TGATTTTCT ATCTAGAAAT TGAACAGAGA  
GCCAAATAAA CTTGAGAAAC TTTATTTCT CAAAGACTG ATTTCAAGAA ACATCTGTGA AATTCACTAA GTTTAAGATA  
TGAAGAGACA GACTAGTTAT TTCTGGATCT AAACAAGTAG ACTTAGTTGT AAAGAGAACT TTTACTCTA TCTTCAAGAG  
AGCTTTTAAA AACTGCAGCC AAGCCTGAGG GTAAGTTGAG GTGTGTGTG GATGGGGCAG GAATGCAAAA ATGAGAGCAA  
AGGAGAATGA GTCTCAAAT CTGTGTGACA AGCACTGCTC TGCGTGTGTA TTCTATCGA CTGAGGTTGT TCGTGTACC  
GGCTGCAATG CAGCCAGCAT CACCTGTGAG CTAGCATGTG ACTTCCCCGA GATTTCTTT CTTACCCACT GCTAATCCA  
TACTCAATTT CTATGCTCT CCCTGTCCCA GGCTCAAGGA AAAACATGGA CTGCTATTGC AGAATACCAG CGTGCAATTG  
AGGAGAAGCT CGCTATGGAA CCTGCATCTA CCAGGAAGA CTCTGGGCAT TCTGTGCTG AGCTGTCAGA AAAAGAAAA  
TGAGCTCAA ATTTGCTTTG AGAGCTACAG GGAATGCTA TTTACTCTGT ACCTTCTGT CAATTTCTT TCTCATCTC  
AAATAAATGC CTTGTTACA GATTTCTGTG TTCCACCTC TTTAATGTG GATATGTGTC TGTGTCAAGA CACTTGGGAT  
ACACGTACCA AAACGCAAAA TCAATTTTT GAACAATATA CCTACCTTG TATAGAAGAC CTGGGACAGA GGAAGCTGT  
CTGCCCTCT TGGTACCCT GCCTAGCTAG AGGATCTGTG ACCCCAGCCA TGAGGACCCT CGCCATCCTT GCTGCCATTC  
TCTTGGTGGC CTGACAGGCC CAGGCTGAGC CACTCCAGGC AAGAGCTGAT GAGGTTGCTG CAGCCCCGGA GCAGATTGCA  
GCGGACATCC CAGAAGTGGT TGTTTCCCTT GCATGGGACG AAAGCTTGGC TCCAAAGCAT CCAGGCTCAA GGAAGAACAT  
GGAGTGTAT TCAGAAATAC CAGCGTGAT TGCAGGAGAA CGTCGTATG GAACCTGCAT TCACAGGGA AGACTCTGG  
CATTCTGCTG CTGAGCTTGC AGAAAAAGAA AATGAGCTC AAAATTTGCT TTGAGAGCTA CAGGGAATTG CTATTACTC  
TGTACCTTCT GCTCAATTC CTTT GATCAAAAT TTTACCTATT ATGCATTGTA TATATAATA AGTATATAA  
TGCACACACA GACACAGCAA TGATGGTGAA CAGTCTTCAT ACAATTATAT GGATGAATCT CATAAATGC TGAGTTAAAG  
AAATCAGACC AAAGAACATA TACTGAAAGA TTCTCTAT ATACAAAGT CAAAAATAGG TGACCAAT CATGGTGGT  
TTAGAAATCA GAAGAGAGG TACCTTTGTG GGGAGGGGAC AGTTAATGC CCAGAAGCGG TAAATAAGGA ATCTCTGGG  
GAGTGGTAAT GATCTGGATG CTGGCTACAG GATGTGTTGG TTGTAATAAT GCATTTTTT ATATCTAGCT TTTCCATGT  
GTATATTATA CTTCAAGAA GTTCAGTTAA TAATTTCTA TGTCAGTGA GAGTAGCTCA GTTAGCCCA GTCAGCTCT  
GGCTTAATCT TGTTTTACCT TAAGCCATCA GTCATTACA AGTAGGAAAA TTCACAGGGA AAGTTAGAGT ATAAATCCA  
GAATGAAGGT TTAAGGGTA AGAGTCTCT CATTTTCAA AGCCCGTTA TTTCTTGATT CCAGTCTTA AGAAGTCTCA  
GCATTGTGTC TTTTTCATGT ATCTTACAAG AAGACAGCAT GTGCTTCTA CACCTGATC ATTGTATCTA CCAGCACTG  
GTAAACAGAA AAGAACCACA TTTTCTTGT AGGAGAAAT TGGTGCTAT TTCTACCAG GCACCAATAA GTGGGACCA  
TAGGTGGGAT TAAAGATACA GTAGAAAGTA TTTAAACTT GCCAGGGGGC AATAGTCTGA AAATAAGTAA ATTGGTGCTA

TAGAATGGAA GTTACAGGCT TCTTCTTTT TTCCACAAG ATCTGCTCCT TGAGCCCTA GAGACTTTT TGTCTGTTAC  
TGTTTCTTCA TTCTCATCT GCAGAGCCAG CCTGAGAAG TGCAGACCAA AGCCAGGGAA GGCTCTGCAA AGATGTACAA  
ATGGAAGTCA CCTTAATAAC CTCTGACTGC TGCGCATAAT ACATTTTCACT CAAAAGAGGG GTTAAACAAT GGAACAGAAT  
ACAGAGGCCA GAAATAATGC TGAACACTGA CAACCATCTG ATCTTTGACA AAATCCACAA AAACAAGCAA TGGAGAAAGG  
ACTCCCTATT CCATAATGGT GCTGGGATAA CTGTCTAGCT ATATACAGAA GATTGAACCT GGGCCCCCTC CTACATCAT  
ATACAAAAAA TAACTCAAGA TGGAGTAAAG ACTTAAATCT AAAACCAAAC ACTATAAAAA CCTGGAAGA TAGCCTGGGA  
AATACCATTC TGGACATAGG ACCTGGCAAA GACTTCATGA CAAGACACCA AAAGCAATAG CAACAAAAAC CAAATTGACT  
AATGAAACTA ATGAAACTCT TTAGTTGTAC AACAGATAGT TTATCTGTAC AACAAAATAA ACTATCAACA GAGTAAACAA  
CCTACAGAAT GGAAAAATTT TTTGCAAACT ATGCATCTGA CAAAGGTCTA ATATCCAGAA TCTATAAGGA ATTTAAACAA  
ATTTACAAGC AAAAAAATGA CCTCATTAAA AAGTGGGCAA AGGACATGAA CAGATGCTTT TCAAAATAAG ACATTCACAC  
ATCCAACAAC CATATGAAAA GATGTTTAAAC ATCACTAATC ATTAGAGGAA TACAAATCAA AAGCATAATA AGATACCATC  
TAATACCAGT AGGAATGACT ACTATTAATA AGTCAGACAA TAACAGATGC TGGTGAAGGT TGTGGAGAAA AGGGAATGTT  
TATGCACTGC TAGTGGGAAT GTAAACTAGT TCAGCCATTG TGAAGAGAG TGTGGTGATT CTTCAAGAAA TGTAACACCG  
AAGTCGCTTT CAATCCAGCA ATCCCATAT TGGATATACA CCAAAAGGAA TAGAAATTGT TTACCGTAA AGCGCATGC  
ATGCATATGT TCATTACAGC ACTATTACG ATAGCAAAGA CATGGAATCG TCTAAATGCC CATCAGTGGT AGACTAGCTA  
AAAAAATAA AATGTGGTAC ATATACATCA CAGAATAGTA TGCAGCCATA AAAATGAACA AGATCATCAT GTCCTTTGCA  
GCAACATGGA TGTAGTTGGA GGCCATTATC CTAAGCAAAT TAATGCAGGA ACAGAAAGCC AAATACCACA TGTTCTCATT  
TATAAGTGAC AGCTAAATAT TGAGTACACA TGGACACAAA GAAGGGAACA ATAGACATGG GACCTACTTG AGAATAGAGG  
GTGGGAGGAG GGTGAGGATC AAAAAGTACC CATAAGACAC TGTGCTTATT ACCTGGGTGA TGAATAAATT TGCACACAA  
AACCTGTGA CACACAATTT ACCTATATAG AACAACCTGT CATGTACCCC TGAACCTAAA AGTTAATGGT GGGGGGGTGG  
GGTTAAGCTA CTTTGTGGTA TAAATCTGAG CATTCAATATT AAAATAAAAT ATTTACCTCA TTAGAGTAAT TAACATTTAT  
TAAGCAAAGA GCCAAGTACC TTACACACAT GATGTTTAAAT CTCACAATGA TCTTTAATCT CATAACAACC GTCCATTGTA  
TGTACATATG TGGAAATTGA GCCTGGAGA GATTAAATGC ATGGGGCATG CCATTGACT AGAACTGGA AGCATCAGGA  
TTTAAACTCA GTTCTGAATG GTTTGTAGG CTTTGTTTT TCCACATTAT AGCATGGCCT GCCATGAAGA ACAGGTCCTT  
TCTGGTGT TTCTGTGTTG GTTTAAGTGA AGCAAATATT TATTTAAATA TTCAAGATAT GCTGTTAAAT TTTTACTCAA  
AAATTTGAGT ACAGTATGGA TCTTCTGAAG CCAAAATCT CTTATTCAAT GCTTAGTTGA GAAATTTTAT GAGTAGTTC  
TCAATTTTGA TGTAGTTCCA CTGCAAGGT AAGTCTATG CAAGATATCA CTGTAATTTT TTTTCTCAT TTGGACATCA  
GCTTTTCTT TTCTCAGAC CCGCTGAAAG ATAATTTTAA AAATAAAAC CTTGTTTTTA TATCAAGTGG GGACATTTT  
TCCAAATGAA AACCGTGTAT TCATTTTATA TGATAAAATC AATGTTATTA TTTTAAAT TTTGATTAA AAATCATTAA  
AAATAAATTT TCAGATATTA CCTGAAATTC TACCATCCAG AGATAATAGT GCTTAAAGAT TTGATATATA GACACACACA  
CATATATACA TATATATCAT CCTAACTTC TTTGTATAAA TGTATATAAA GTTTTAAATA AAACTAGGA GATTAATGCC  
CTTTGAATGA AAATAAATAC AATGTGTATG CTTTAACTAC TTGCTTTAC TTTATAACAT TTATCAGAGC AGTCATGAGA  
TAATGATTGA CATGGTCATT GTTAGTAAAG TAATAGCTAA GTGCATGAAC TCTGGAGCTA GCCTCCCTGG ATTTAATCC  
CAGATCTGTC ACTGACCAGC TGAGCAATAC TAGGTAAATT GCTCTGTTC CTTAGTTTCT TCATCTGTAA AATAGAGATA  
AAAATAATAT CCACCTCATA GGATTGGTGT GAGCATTAAT TGAGCATACG TATGTAGGCC ACTTAACAAC AATGCCTTCA  
CATACTGAAC ACAATATAC GAGCTGTGT CTTATTGGGC TCATGTTTTT CCTACCTA AGCCGATGC ATGCAAGGAC  
CATGTTGGTT TTGTCCACA TTGCATCCCC AACCTGGTAT ACAGTGTGCA TTCAATAGTT GTTGACTATT ATTACTAGTG  
GCATTTAACA AATATCTGTT AAATGAGTGA AGAAATACCC ATTTACTGCA AGTGTGTCTA ATATTGATGG CATAATGGG  
GAAACTCAAA CTCTGGAGT AAACAGGTTT TAAACCTTA TTCTCTATC CTCAGTTATT GACGTTTTT TTTTGGCAGG  
TGTGTGTGTG GGACAACCTA TTGAACCTTT CTGAATTTCC AGCTTCGCAT ATATAAATA GAGATAGTGA TTCATTCTTG  
CAATGTATGG ATTTGAGACA ATGTGTAAAG TTTATCAATA AATAGTAGCT ATTTTGTAT AAGTATTACA TATAATATCC  
AGGCCACTGC TTTGCATAAC CCAAAAGGGG CACCATTCAT GCAGAATACA ACATAAATGG TGTCCCTGGA GCAGTGCAGT  
ATAGGAACCC TGAGGGGACC TACAGTATAC TTTATAGTTC ATAGATTACA AATTATCCCT TTATCAGAGT CTCTCAAGGT  
TGGATGTATT TGAGGTCCAT AAGAGCAATT TAGGATTAAC AGTAGTGCAG GAAACCATCT GCAGTGATAT TCTCATTTTA  
AATCCGCGGG AAAGAAGACA GCTATAAAT TGGGACCTGG GTTTAAGCAT TTTAAATGCC AAGTTCACCA TTTTCTAAAA  
CACAACAAAT ACCCAGTGAG AGAGGGAGAA GGAAGTAAA TGCCTCTGAA TAAGCAAGTT AATGTCAGTA GTTGTACTGT  
ATGCATATTG ATGAACAATA GAGGAACCAA TGTCCAATCA GATGAGCAGG ATATTGGCA ATAACAAGTT GCCTTTGAGG  
AAAAATGATT TTCTTGCAA GTTCTTTATC AGCATTACAA AGCTAAAAGC TACGCTTATC ATCACTTATA CTAGCATACC  
CTGTTGTGCA AATGCTGTCT GTGTTTGCAT CTGCTATTGT TGATGCCTGG TGCATGAATC AGGACTCCAG CCCACAAGTT  
TTCCAGAAC TTTCTTATGG CCATCATCTT TAAGTGTCTG GTGAACAGTC ATAGTTTGGT ACACAAAGG GTCAACCTGG  
GGGATGGCTA GGGTTTGACT CAGTGGTTAC ATTTCAATAG AGCAGGAAGG GGAAATGGT GCCTGTAAAC TCAGGGAATT  
TTGCCAGTTG GTCCACCCCA CTCTCTCTCT CCGTCTGCTA GGAAGTGGCA CAGCCTAGAA CAGCACCACA GGTGAGAGAA  
ATGCAAAACC TAACCAGAGA AGCAGACTCT TTGCCAGTAG TAATAGTTCA GGACCACCAC CAGCTTTTAT TAAAAATTTT  
AATAACACTC AAGTATTGGC AGAAAGAAAT AATCTTGGGT TAACTATAAC TAGAATATTG ACTCTTCTC TGTGGAAGAA  
TCAGCCAATC ACATTTGTTT ACATCAGTTC CCTGGAAGAA GAAAAATACA CTGATGTTGC AGCAAGACAA ATTTAAGCTA  
GATGTAAATA ACTTCTTTA GCCTGTAATG CTAGGCTAAT TACATATTGG AACTATTTT TCAGGGAAGA ATTTGTAGG  
GTTTCAGGA AGAATCTGA AGAAAATATA GAGCTGAAT GATCTTGCA CTCACTGAAA CTGCAAGGTT TAGATCCACA  
CTGATCTCG TTCTATTATC ACTGTAATGA AGGCTGATGG AATAAGTAAA AATGTTTGT ATTAGTATGT TTTTACATT  
ATTTGCAAGG CATAAATAGG TTAGGTTTTG ATCTTAATTT AATTCTAACA TGTATTGTGC ACAAGCTGTG AGCAGTTTTT  
AGGAGTAGG TATCTGGCCA TGAATGTTT TTAGGAGTT AATCATCTGG TAGAAGGGT ATACACAATA GGAAGATGTG  
TGTGACAGGT TGTGATCATT ACTATAATCA CACAGAGAGC TGTAGAATTT TAGGCTGGCA GGGTGGCTCA CGCTGTAAT  
CCCAGCACTT TGGGAGGCCA AGGCAGGCGG ATCAAGAGGT CAGGAGATGG AGACCATCCT GGCTAACAGG GTGAAACCCC  
GTCTGTACTA AAAATACAAA AAAAAAAAAA AGCCAGGCGT GGTGGTGGG GCCTGTAGT CCAGTCACTT GGGAGGCTGA  
GGCAGGAGAA TGGCGTGAAC CCGGAGGTTG GAGCTTGCA TGAGCCGAGA TCGCATCACT GCAATCCAAC CTGGGCGACA  
GAGGAGACT CAGTCTCAAA AAAAAAAAAA AAAAAAGTCT ATGTTAGATC CAGAGGGGTA GCAACTGGGG CTGGGCTGTC  
AGTCAACTCA GTCAACTCAG TCAACTCTGC TCCCCACAG GAGATGCCAG TGATGCATTT TCATGGCCAA CATTGTCACT  
CAGCATCATT GAATTACTCC TGATTATAGA GACACAGCTG CAAACGATT CCCATTAAT ATGATGTTT TGTCAATGTT  
TGGAAGGTAC TCCTTTTATG TAAGGGAAAT CCCCTCTCT GGCCTGCTGA AAGTTTTTTC TTTCCATTTT AAAAATCGTG  
AATTCCTTTT TGCAATATTG AGGTGGTTAT ATGGTTTCTC TTCTCTAATC TGTTAATATG GTGATTTAAT GGTAGAAAT

TTTCTAATGT AAATTCCACT CATATTGCAG AAATAAACCT AAACGTAGCA TGAGGCTATA TTTTATTATT GCTTCTATAT  
TTGGTTGCTA TACAGTATTA TGTTTAAGAT TTGTTACAT ATATTGTGA ATGGGATTGG ACTATTTTTE CTCTTGCCG  
ATTTTATCT GTTTTTTAAA TTAAGGATAT TTAGACTTA TGAATATTT GGCAACAAT CTTGGCAAG TAATTTTTTG  
GGGAATTTGT TTTGGCTATT TTGAGTATTA CCCAATATAT TTTAATTAAG TTATCTTAA TGTTTTCTTA ATTAAAAAAA  
TTACCTACT TAGAGATATT CTTTATGTAC TCCAGATTTT GTCTATTAT ACCACTTTTC TTTTTCCTC GATGAGTGT  
ATAGATGTC ATCTATTTT TTATCTTCT TGATCTTCT TTAATCTTG TTTCTATTAA CTCTGAAGT TTATTATTT  
CTTTTTCCTA CTCTCTATG GTTTATCTT TCAATTTTTC TCTAATCTT TAAGTTGGGT GTTTAATTTT TAGCTTGCTT  
TGCTTTTTTA GGATAAGCAT TAAAACTACA AATTTTCTT GTTATCTTT TGCTGCACCC CAAATTGTTG ATATTCTAT  
TGTCTAATTT CTATTCATT AGAATACTTT AAAGTTCTT TTTGGTTTT AAAAATAAC TTTTAAAT GACAAATAAA  
AATTGTGTAT ATTTATTGT CACAGCATAT GGCTTTGAAA TATATGTACA TTGTGGAATG GCTAAATTA GCTTATTAAT  
GTATGCATTA TCTCACATAC TTATCATTTT TTGTGGTGAG AGCTATGTGA CTTTGAACCT TATGAGTTAT TTAATATTT  
TTAAATTTAT AAGCATATTG GGATTTAAG TAATTTACCT TTTTATTAT AACTTATAAC AAGTAGAACA GTTAACCTGT  
ATGATTCTAC ATCATTGAAA TTTATTGACA TTGTCTTAT ATGCTTATAT ATGCTCTACT TTGTTCATG TTACATCTGT  
AGTAGAATTG GCTAATAGTT GAGTAAAGTA CACATATGTC TATGAAATCA AGTGTAATCC AGAGAAAAAG AGAAATTAC  
TGAATATATT GTTCTAGGTG CTATTATATG TTGTCATGTT TAATCCTCAC CACAATTGTA TGAGGCAGCC ATAATTAATT  
CCACTTTACA CATGAGGAGC CTGAGGGTTA AAAAAAAGC TAGCTCTACT ATTTGTAAG AATGAAGCAA AGATACAAAT  
GAAGGCCAC ATATCCTATA ACTAGATATT TAAGCATTTT AATTCAGCT TTAATACTGC TAAATAAAAT GTGCTCCAAT  
TTCTATATTG ACAGACATAC CTTCCTAATG AGCTGGGGT CGAATTTAGA AATCTTTGAT GCTTCAGAGT CCACACTGAA  
ATGTGGAGCG ACATAGTGAG TTGGTCCCA GCCTTCAGTC CACCCACCTT CTCTTACTA AATCACCTT CACATACATG  
TATGAACACC CCAGCCTCCA AGTCCAAACC CTAACAAAAA TGGGACACCC TTGTGCATAC ACAGAGACAC AGCCATCCT  
CAGGAAAAACC TGGAAAAGTC CATACAAGTT CTGGAAGCAA GCTTGGGACG GTTTCAGTAG TGTGGTCTAT AAGGGAGGCC  
TCAGAAGACA GGTTTTCTTA ATTCTGTGAA CTCTCCAC AGTAGAAAG GTGCTGGAGG AGGGTCAGAG TGAGGACTTC  
TAAAGCATGG GTCCTGAGTA GGGGCCACTC TTGCCAAGT CTAAGAAGGG TACTAGAATA GCACACTACT ACTAGATACT  
AGAACCAGTA TACAAGCACA GGTCTTCTGA AATTAATAAT AATAATAACT ATTACCATTA TTATACCACT AGCTGTCTAT  
TATTAGTGC TTATTATTG CCAGTCAGT TCTAAATTC TTTACATGTA TTATACAAT GCCATATAAC TGCCATATGA  
GGGATGTACC CTCATTGTCA CCTTTTACC GATGAGAAAA TGGCATAAA ACGTTTAACT AACTTGTCCA AGTTACAGAG  
CTTAGTGAAG CCACAATGTT GCTCAATTTG CTCTCAACT TCAAAGGGAT GGGAAGGACA CCTAAGTCAT AGAGTCTTTA  
AGAATCAGAG CTAGAAGGAA TCTTAGATGT TATCTAGTCA GCCTCCTCC ATTACAGTCC AAGAGAAGAT GGCCCTGAGT  
TACTTGATGC TATTTTGTCA TGTGAATTGC AAGTGAATAT ACATTCTACT GAAGATAAAA GATATTTAAA GATATCGCTG  
GATATAGGAA CAGTGGTTTT AAATCTCTAG GCTTAACTT TTCTCAGAAC AAGAAATCCT TTTTGGTTTT AATCTATATG  
CACATCTGTA TTTTCTCAA TTATCGGTA GTAAATATA ACTTTCTTC TGTAATATT TTTAACTTTA ATGAGTGTTC  
CTCATAATAG AAAAGTTTGG AAACCATGTC TATGGGTATA TACTTCTAA AGGGATAGTA ATTTCTCTAG AATATTCACT  
TAATGCTCCA GAAGTAATTA GCACAATTGT GCAAGTCTGT GCATCATCAA CTATACATTC TGCTGTGTTA CTCCAATCC  
ACATGAACT GATTATACAG TCAAAGGCGA GCCCAGTGA GAGGCATTTT TGGAGACTTC CTGGTACATT GAGACAGGGT  
CGGCCAGTCT GCGTTAGGT CTTGGTCAAA ACTGCATTTT TGAATACTAA CTCAGATTGC TTTCTTTTAA GGGGTCAGAA  
CTGATTCAAA TCTCATTTT TAAAAGCCTT AGATGTGGGG CTTTCTCTAT TCCAGTCTC CGCTATTGGT CTTTGTGAAT  
CCACAGGCAA TTTGGCCACA TCCTTGACT TCTCTTATAT TAAGAAATTA ACAGCTAAGT TCATGCAGAG GAAATATAAC  
AAAGGAGGGA CTTTCTTACA AGATCTTTGA AAAATGGAAC ATTTGCATAA GTCATATTTA GCCAGACTG TTGTTTATA  
TTTTCTTTC TGAATACTTT GTTACACCTC CTCCAGCCA ACCCCCCC TCCCTGACCC CAACTAGTCA GAGACCAAG  
CCTTCACAAT GGTTTACTT TGAACCTTCC TGGCCCCACC CTCATCATCA CGCCTGAATA ATTACATTCA CTGACTGGTC  
TCCCTGCTT CCGTTTATCT CCACTCTTAA ACCCTCTGAC ACCTTAATCT TCCCAGAATA CCATTGTGAT CTTGTCCAC  
TCTTGCTCAA GTTTTCCCAG AAACCTAGAGT ACAAACCTTA TAAGCTTTAG AGTTGAAAGC CACTCTATCT CTTTTCATC  
CCCAGTCTC TGCCAAGGCA GTATAACCTG TCCAACATCT CTAACCTTCAA TACCTTTGTC TTAGATACTA GACTCTCTC  
CTGTTTTCTA ATTAACCTG ATCTAGGATC TAATTTTGGC TCTGAATTCT GTTGGCCTTT GCCAAGTGAT CTCTCTCTC  
TCTGAGCCG AGCATCTCTG AGCTTGACA CTTAGCATAG CCATAGCACA CACAGCCTTA GCTTGCAGTT CAGGGTGT  
ACCTTCCCTC CCTTCCAGA TGCTGGATCC CCAGGGATAG GAACTCTGCC CTTATGTGTC CATAGCCCCT GGTAGTATGT  
CTTGCACTG TACATTTTCA GCAAATGTTT AATTGGTTAA TTGAAGACAA CTGTCCCAGT CCTAAGCCT CTCTTTTGC  
TAAACATGCC TGTGCTCTT GTCAATTGAAC AACTATTTT ATCTATTTT TTCTGACAT AGGGGTCAGT TCCGAGGATG  
CTGAAATCAA GAGACATAGC TTATCTCTC AAAATGCTT TCAAGAGTGA TTTTGTGTG AATTGAGAAC TGGCTGCCTA  
CTTTTGGACT ACCCACTTCA GCAAGAGTGT TTGAAGCCAA ATCTATTCTA AGTAATTTT TATTCCTTT TCTCTATGGC  
ATTAGACACA CAGCTCTTTT AAACCTACT TCGTTATCTA TTAACAGAC ATTCAGTAAC TCTATAGACA CTGTCTAGCT  
ATATGAACCT AGACAACTA ATATCTCTGA GCTTCAGTTT CTTAAATTT AAAATGAGGA CAATACCATC TATGGCCGGG  
GATTAAATGC TATGAGGAAT GTAAACCAGA TGTCAGGTAC CATCTCTCTA AAATCCAGAT AAAATGAAT AAAAATACTG  
GCCGCAAAACC CTCTCTAAGA GTTCTCAAAA TTCTCAGAGA GCTTAATTTT CATGCTCACC ATAGCACCCT TTTTCTCTA  
AATATTTTGT TCTTACCAA ATATTTTGT CCAATTTTGC CTTTATGTC TATTTCTTCA TATCCACTTT CCAAACTAA  
AGAAGCAGCC TCTCACCTT AAACCTCTC TTCAAAGCAA GGTCTGGGTT TGTATTCCTA GTGGGATGTT  
ACAGAGGTTA GTGTGATGCA GAGGAGGAGT CATGCTGTTT AAATCCATAC TAGTCCCAG AGGCCAGGT CTTCTGCCA  
CCCCTACCC TCCCGCCACA GAGCTCTTCA GCTTCTCACA TTTCTAGTTC TTCTCTCTCT ACTTTCATTA CTTCTCTCT  
TTTTTTTTTT CTCTCATGT GCTCACGGGA GCAGAGAAAA TAACTCCTC TAAGTTTTCT TAACACAGAG TGCCTTAATT  
ACATATTACT ATTGTTTGTG TTCTGCCAA CACTACGTCT GTAGGGTCAC ACCTGCTATA TTAGAGGCTT ATCAAAAAAA  
GATAGCTTTC TCTAAAAAG GGATTTGGAT GCCTACTAAG ATAAGTGGAT GCCAAGATAA GTTTAACCTA ACAAACCTTA  
TTATTATTAT TATTATTAT ATTAGAGATA GGTACTTATT CTGTCACCA GACTGCAGT CAGGGATGCA ATAATAGCTC  
ACTGCAGCT CAAAGTCTG AGTTCTATGCA ATCTCTGTC TTGAGTCTCC TGAGTAGCTA GGACTACAGG CATATGTCTAC  
TCTGCCAGC TACTTTTAAA AAAATAATTA GGGATGGGGT CTTGTTGTAT TGCCAGGCT CGTCTCAAAC TTCTGGTTTC  
AAGCAATCCT CTGCTCTTT ACCTCCCTAA TTGTTGGAGT TACAGGCATG AGCCACAGCA CTCAACCAAG ATTTAAAAAC  
TTTTAAAAA AATCACATTA CTACTGTTA TCATCATTAT GGTTACTACC AGTGTTAAAA CAATTGGTAT TGAACACACC  
ACTACCAGAT CAAGCTTCAA ACCAAGATGT CAAGTAAATA TTATTGTGAC ACCTCTGAGC CCAAGCCTGC AGGTATACAC  
CCAGATGGCC TGAAGCAAGT GAAGAATCAC AAAAGAAGT AAAATGGCCG GTTCTGCTT TAACTGATGA CATTCACCA  
TTGTGATTG TTCTGCCCC ACCTGACTG AGGGATTAAC CTTGTGAAAT TCCTTCCCT GGCTCAGAA CTCCCCGACT

EPI-109

51

GAGTACCTTG TGACCCCCAC CCCTGCCAC AAGTGAAGAAA CCCCTTTTGA CTGTAATTTT CCACTACCCA CCCAAATCCT  
ATAAACACAGC CTCACCCCTA TCTCCCTTCG CTGACTCTCT TTTACAGACTC AACCTGCCTG CACCTAGGTG ATTCAAAAGC  
TTTATTGCTC ACACAAAGCC TGTGTTGGTG TCTTTTACA CAGACCATGT GACATTTGGT GCCGTAATC AGATCGGGGA  
ACCTCCCTTG GGAGATCAGT CCCCTGTCAT CCTGCTCTTT GCTCCATGAG AAAGATCCAC CTATGACCTC TGGTCTCAG  
ACCAACCAGC CCAAGGAACA TCTACCAAT TTTAAATTGG GTAAGTGGCC TCTTTTACT CTCTTCTCCA GCCTCTCTCA  
CTATCCCTCA ACATCTTTCT CTTTCAATC TTGGCACCAC GCTTCAATCT CTCCCTTCCC TTAATTTTCA TTCTTTCTT  
TTTCTGGTAG AGACAGAGGA AACGTGTTCT ATCTGTGAAC CCAAACTCC AGCACTGGTC ATGGACTGG AAAGACAGTC  
TTCCCTTGAT GTTAAATCAC TGCAGGGATG CCTGCTGAT TATTACCCA CATTTCAGAG CTGTCTGATC ACTGCAGGGA  
CGCTGCCTG GATCCTTAC CTTAGTGGA AGTACCATT TGCCTGGGTG GCAAGCACA CCTCTCTGG GGGGCAAGCA  
CCACCTCTCC TGGGGGGCAA GTACCCCCA ACCCTTCTC TCCATGTCTC CACCCTCTCT TCTCTGGGT TGCCTCTTC  
ACTATGGGCC ACCTTCCACC CTCCATTCT CCCTTTTCTC CTTAGCCTG TGTCTCAAG AACTTAAAC CTCTCAACT  
CACGTCTGAC CTAACCTA AATGCCTTAC TTCTTCTGC AATACCGCTT GACCCCAATA CAAACTCAAC AATGGTTCCA  
AATAGCCTGA AAACGGCACT TTCAATTTCT CCATCCACA AGACTTAAAT AATTCTTGT GTAAATGGA CAAATGGTCT  
GAGGTGCTG ACATCTGGGC ATTCTTTTAC ACGTCGGTCC CTCCCTATG TCTGTTCCA ATGCAACTGA TCCCAATCC  
TCTTCTTTC CTCTCTGCT GTCCCTCAG TCCCAACCC AAGTGTGCT GAGTCTTTC AATCTTCTT TCTACTGAC  
CCATCTGACC TCTCCCTCT TCCCAGACT GCTCCTCTC AGGTGCTCC CCGCCAGGT GAATCAGGT CCAATTCTC  
CTCAGCGTCC GCTCTCCAC CCTATAATCC TTCTATCAC TCCCTCTC ACACCTGGTC CAGCTTACAG TTCTATTCTG  
TGACTAGCCC TCCCCACCT GCCCAACAAT TTCTCTTAA AGAGTGGCT GGAGCTAAAG GCATAGTCAA GGTTAATGCT  
CCTTTTCTT TATCCAACCT CTCCATCTC AGTTAGTATT TAGGCTTTT TTCATCAAAT ATGAATACCT AGCCCACTCC  
ATGGCTCAT TGGCAGCAAC TCCTAGACAT TTTACAGCT TGGACCCAGA GGGGCCAGAA GGTCACTTTA TTCTCAAT  
GCATTTTATT ACCCAATCCA CTCCCAACAT TAGAAAAAG TCCAAAAGT AGACTCCGG CCTCAACCC CACAACAGGA  
CTTAATTAA CTGCTTCA AAGCGTACAA TAATAGAGTA GAGGCAGCCA AGTAGCAACA TATTTCTGAG TTGCAATTCC  
TTGCTCCAC TGTGAGAGAA ACCCCAGCCA CATCTCCAGT ACACAAGAAC TTCAAATGC CTAAGCCACA GTGGTCAAGC  
ATTCTACAG GACCTCTCC ATCAGGATCT TGCTTCAAGT GCCAGAAATC TGGCCACTGG GCCAAGGAAT GCCTCAGCC  
TGGGATTCT CTAAGCCAT GTTCCATCTG TGTGGGACCC CACTGGAAT CCGACTGTCC AACTTGCCCA GCACCCACTC  
CCAGAGCCCC TGGAACTCTG GCCCAAGGCT CTCTGACTGA CTCCTTCCA GATCTTCTG CTGTTAGTGG TGAAGCTGA  
TGCTGCCTGA TCGCTCAGA AGCTTCTG ACCATCAGAG ATGCTTTTG TAACCTTAA AGTGGAGGT AAGTCCGTCC  
CCTTCTTAA CAATCAGAG GCTACCCACT CCACATTACC TTCTTCTCA GGTCTGTCTT CCCTTGTCTT CATAAATGTT  
GTGGGTATTG ATGGCCAGGC TTCTAAACCC CTTAAACTC CCAACTCTG GTGCCGATT AAACAACATT CTTTATACA  
CTTCTTTTA GTTATCCCA CCTGCCAGT TCCCTTATTA GGCTGAGACA TTTAACCBA ATTATTGCT TCCCTGACTA  
TTCTGGACT ACAGCCACAT CTCTTGTCT CCCTTCTTCC CAACCCAAAA GTGGCAACTC CTTTGCCACT TCCTCTCATA  
TCCCCCTACC TTAACCCACA GGTATGGGAC ACCTTACTC CCTCCCTGGC AACAATCAC ACCCTCATT CTATCCCAT  
AAAACTAAT CACCTTACC TGGGTCAACG CCAGTATCCC ATCCCAAC AGGCTTTAA GGGTATAAG CCTGTATCA  
CTTGCTGTT ACAACATGTC CTTTAAAGC CTGTAACCTC TCTTACAAT TCCCCATT TACCTGTCCA AAACTGGAC  
ATGCTTACA GGTAGTTCA GGATCTGTG CTTATCAACC AAATTGTCTT GCCTATCCAC GCCATGGTGC CAAACCCATA  
TACTCTCTA TCCTCAATAC CTCCCTCAA AACCCTCCA TAACCTTAT TCTGTCTGG ATCTCAAAAC ATGCTTCTT  
TACTATTAT TGACACCTT CATCCAGCC TCTTCTACT TTCATTGGA CTGACCCTGA CACCCATCAG CCTCAGCAAC  
TTACCTGGGC TGTACTGCC CAAGGCTTCA TGGACAGCCC CCATTACCTC AGTCAACCCA AATTTCTTCT TCATCCATTA  
CCTATCCAGG CATAGTTCTT CATGAAAAA CACGTGCTCT CCTGCTGAT CATGTCCAGC TAATCTCCCC AACCCAGGA  
CTGGCAAAAT CATTACTC ACATGCCCA AATCAGGACA CTAAGTACC TCTTGGTCTG GGTAGACACT TTCACTGGAT  
AGGTAGATGC CTTTCCACA GGGCCTAAGA AGGCCACCG GTTCATTCT TCCCTCTGT CAGACATAAT TCCTGGTTT  
GGCTTCCCA CCTCTATACA GTCTGATAAT GGACAAGCCT TACTAGTCA AAGCAGCAA GCAGTTTCTC AGGCTCTTG  
TATTCAGTA AACCTTATA CCCCTTACG TCCTCAATCC TAGGAAAGG TAGAAGTAT TAATGGTCTT TAAAAACAC  
ACCTCACAA GCTCAGCCTC CAACTTAAAA AGGACTGGAC AGTACTTTTA CCATTGCCA TTCTCAGAT TCGGGCCTG  
CCTCGAAATG CTACAAGGA CAGCCATTT AAGATTCTGT ATGGACGCTC CTTTATTA GGGCCAGTC CATTTCAGA  
CACCAAGCCA ACTTGAAGT TGCCCAAAA ATGTGCTAT CTTACAATCT TCTGTCTAGT CACTCTCTA TTCACCTT  
TCAACTACT GTAAATGCC TGGCTTTT TACAGTGTG ATTTACTT TTCTCCAA CCATCATAAC TGATATCTC  
TGGTTTACC TCAACCGCC ACCCTAAGT CTCTTAAA GTGGATAGAA GATCTTCACT GACAAGGTAC ACTCCAATAC  
TTTACCCTA ATAAAGCCT ATTCTTACT TTTATATTCA CTCTATTCT TGTCCCAT CTATGCCAC TCTCTACCTC  
TCCCCAGCTA TCTCCACCAC ACTATCAATC TACTCACTC TCTCTAGCC ATTCTAATC CTTCTTAACT AAACAATTGC  
TGGCTTACA ATTTCTCTT CCTCCAAAT CACCGAGTCC TCAATTTACT CACTGCTAAA AAAGGGGACT CTGCATATTT  
TTAAATGAAG AGTGTGTTT TTACCTAAAT CAATCTGGCC TGGTATATGA CAACATAAAA AAAACTCAAG GATAGAGCCA  
AAAACCTTGC CAACCAAGCA AGTAATTATG CTGAACCCCC TTGGGCACTC TAATTAGATG TCCTGGGTTT TCCGATTCT  
TAATCTTTA ATACCTGTTT TTCTCTTCT CTTATGCAGA CTTGTGTCT TCCATTAGT TTCTCAATC ATACAAAACC  
GTATCCAGG CATACCAAT CATTCTATAC GACAAATGTT TTAAGGGAGG AGACCACCC TCATATTGCT TTATGCCCAA  
TTTCTGCCTC CAAAGAAAGA AGTAAAAATG AAAAGGCAGA AATGAAATCC ACAGGCAGAC AGCCTGATGC CACACCTGG  
GCCTGGTGGT TAAGATCAAC CCCTGACCTA ATCAGTTATG TTATCTATAG ATTACAGACA TTGTATGGA AAGCACTGTG  
AAAACTCTG TTTGTTCTG TTCTCTAAT TACCAGTACA CGCAGCCCT AGTCATGTAC CCCTGCTGT CTCCCTGTG  
TTGCTCAATC AGTCATGACC CTCTCAGCA GACCCCTTA GAGTTGAAG CCCTTAAGAG GAAAAGGAAT TGTCACTCG  
GAGAGCTCG TTTTGGAGAC ATGAGTCTG CCAATGCTCC CAGCTGAATA AAGCCCTTCC TTCTTAACT CAGTGTCTGA  
GGGTTTGT CTGTGCTTG TCCTGCTACA GTTTCATCTA ACAACCCCAT AATATCACCC CTTACCACA AATCTCTCT  
CAGCTTAATC TCTCCACTC TAGGTTCTCA CGCACCCCT AATCCTGCTC GAAGCAGCCC TGAGAAACAT CGCCGTTAT  
CTCTCCACAC CACCCCAAA AATTTTCACT GCCCAACAC TTACCACTA TTCTGTTT TTTTCTTAT TAATATAAGA  
AGATAGAAAT GTCAGGCTC TGAGCCCAAG CTTGCACGTA TACATCCACA TGGCCTGAAG CAAGTGAAGA ATCAGAAAAG  
AAGTGAAAAT GTCTGTTCC TGCCTTAACT GATGATATTC CACCATTTGT ATTTGTTCT CCGCCACCTT GACTGAGGA  
TTAACCTTGT GAAATTCCT CCCCTGGCTC AGAAGCTCCC CCACTGAGCA CTTGTGACC CCCACCCCTA CCCACAAGT  
AAAAACCCCT TTTGACTGTA ATTTTCACT ACCACCCAA ATCTATAAA ACAGCCCCAC CCCATCTCCC TTTGCTGACT  
CTATTTTGG ACTCAGCCCA CTGACCCCA GGTGATTCAA AAGCTTCATT GCTCACAAA AGCCTGTTT GTGGTCTCT  
CACACCGACA CGCGTGATAA TTATTATATT ACTTTAACT AAAACCTTT CAGAGTCTCG CAGGAAGGC TGTATATATC



TCATAAAATG TTGGGGCCCCA CTGGATCAGA CAAGGCCACA AAGGCCAAAG GGAAGTAAAG ATCTCATTAT TTCTCCTAAT  
AATTTCCCTG TCCTTTGTCA TAAATGGTGG GTAGGCTGTT ATGGTGATGG CAGATTTTCT TTCCATAAAA TGTCATAAAT  
AGGACATTTG AACAGAAGGG AAAAATCAAA TTGCTGAAGT TGAAAAGAGG CAATGCAAAG AACTTTGGAG AAAGAAGTGT  
ACAGAGAAGT CAACTGGCAG ATGGGAGGAA GTTTAAGGGG AAAAATATAG ATGTCTAAAG AATACATTTA TTCATTTTCC  
ACAGTGCAAT TTGGACAAGA AGCCTCTTTC TTGCTTCTT CTATTCTCAT TAAATCATTG GAGCTCAAGC AATCCTTCTG  
CCTCAGCTTC CCGACTAGCT AGGACTACAG GTATGTGCTA CTATGCCAG CTAATTTTTT AAAAATTAGA TTTAATTTG  
GTGAATATT TCTGTAGGAA ACTACAATAA TACAGCCCAG GCACATTGAT CTGGGTGAA CAAATCAGAA GGAATGAATA  
ATTCTGTGTT CTGGGACTC TGACAATTTT ATGAACCTGG TACTCTGAGT AAAGCATAGG AGGAGTTATT TCATAAAATG  
TGGAGCACA TCATGTGACA AAGATAATGG GATCCCCATT TCATAAATAA ATCTGAAGTT CAGAGAGAGT AACAAGTGGC  
CAGGGTCACA TCACGGAGAC AGAGGCAGGG TTCCCACTGA TGCTCTGAC TCCCTGTCCC AGGCCCTTCC TCCTCCGCA  
AGCAGAAGTG CAGGGGGCAG AGCTGACCCT GTGAGTGAA AATCTGAGGG CTGAGTTCCT ATTGGAACAC AAGTGAAAGA  
CTTCTGGCT TCTAATCTCA GGATAAGGAC TCAGAGCTCC ATCTGTTCCA GCCTTAGGAT AAGAACCAGA ATCTTACACC  
ATGAAAGCAT GAAAGGTAAG ATTTGAGTGA GGAAGAAAAA AAAAAGTCT TGTGTTTCAG ATTCAAGTTCA CAAAGCAGTT  
TCATCTTAA GGTACCATCA CAATAACCCT GTGGGTAAAG CAAGGCAAT TCTATTCTTG TTTATGGGC ATTAGGAAGTA  
AGTCTCAGGG AGGTAAAGAC CAAGGTTTCT GGAGAAATTT ATATTATGAA TCTTGATTGA TGGGATTACT ATTAGTAAAT  
TCCTAAGATC ATATAGGAAT CCTAGAGCTT GAATATAGAA CTTTATTTT AAATCTATAT ACATCATAAT TACAAGGAGT  
AGTGTCATT TGGGTTCTT GGCCTGATG TGTTAGTGGA ATAAACATTT TTGTCAGGGT TGCCATGTGT GTCTGTGCAC  
GTGTGCACTG TACACCTCCA GGGGATGTAC CCTAAACCAC ATGAATGTGA TTTGCACATC CAAGATTTAC AGTGTACTAT  
AGGGAGAATC TTTTGAACA GCTTTTGCTA TAATACAGAA TCTGAGATGT CTTTGAGAAA GAAAAGTGA ATCATTACCA  
AAAAATTTT CTCATAATGT GTGCAATTTT GATGAAATC TATATTGGCC ATGGGACAAG GAGGTATTTT CAGTAGCTT  
CTGAAAGGGC TCTATTCTCT CATAAGAATT CAGCTGTTGA CATTAGGTGA TATCTGCCCA GGTATCAGA TGCCATAGAG  
AAAGAGGGT TGCTGAAACT TATATCAGCA GTGCACTGTA TGCTCTTCT GATTTATTTG AACATTCATT TATTGAGTGT  
CAAGTAATGC ACTAGATACT CCAGGGATCT GACACAACT CTGCCCTGAA GGAGCATGTA ATCTCACTGG GGAGAAAACA  
AAACATATGA TAATTTCAAA ATAACAACT AGGCAAACTA GTTAACACTT AAAAAGCAGG CTTTATTCAA ATGCAAAAT  
GCATGTTACA GGGTAACCTT TCAGTAAGAA GCCAGGAAGA GGAGCTCATC ATGGGTTGGA TTAGTAAAGG ACTAGTTATA  
AAAGAACTGG TGGGTTGAG GGAGGCTGA GATGAAATTT AAAGAATATG TAGAATCTAG GTAAGTGGAT AAAAGTCTG  
GGGGCAGGGG AAAGGAGAGC ATTTCAATGT GAATCAAGGA ATTTCTCCAC CTGTTTTAAC TCTTCCATAT CACATAGAA  
AGATGTCACT TGCAGCTAGC ATTTCACTGA TGTTTTCTA CTAATAATAT CGTGATAAAA GAAACATTGA CTATAAGAAA  
TAGGAATGGG TCTCATAAAA GGAAACAGCA AAACCCCCAA ACTAAAAAAC AGCGCAGGCT ATTTCTCTCT TCTCTCTTT  
TGCTTGGCAG TCATGAGATG CTAGGTGTGG AAGTCAGCCA ACTGAAAAAG AGAGGTGGCT GAAGAAGGTG GGGAGGCTGA  
AGCCAGTTAA ATAGGATGGT CCAATTCACA GACGGCAGG CTACAGTGCA AATAGGACTC TTTCACTTG AGCAGGACCC  
CATTACTCA CTGGAGTTAG AAAGAAAGGA GAGCGTAGAC TTTTGAAC TTCTATAAGA GTGTACCTCC ACAGTATACA  
GAAGACGAGC TGAAATTTGA TCTGCAAGAA AACTGAGTCC ATATTACAT ATGTATCAA TTTGCACTC ATTTAGAAGT  
GTCTGTATC AAGTACAGCA CTGAATTGAA ACTGAAACA AGAGTCAAGA AAGAGCAAAG TCAGCCATCT TTATATTCCA  
CATGAATCCT TTCCCTTAT GGTCTTATT GTTTCTCTC AGAAAAGACA AAAAGCTGAG CTGTATAAAC ACCTGTGGGC  
TGGGGGTTGA GGGATAAATG AGGGGCGAAA TGGAAGCTGA AGGAACTGTT GTTCAGGTAG AAATCTTCCC AGATGCACTG  
AAGGAAACAC ACTTCATGTT TGACGTAGGA GGTGCCACCA CACAAAACGT TCTATGGAAG GATTTAAAGG ATCTCATGAT  
TTTTAGTATT CCAAGAAATTT TCTTTCACCA AGGGCGATTT AATATGGGTC ATTCATACTG AAAGAAAAAC AAAAGATAAT  
AAGAGTTTAA AAAATGCAAA ACTTGGAGTG TTAGTAGTAA AGGTAAATAT TCATTAGAGA TGAGAAGAGG AAGAGGAAA  
TGCTTTCAGC TGGAATCTC AGACAAGAGG CCAGGCTTGA GGAACCTCTG AAGATGAACA AATGTAAGCA AACCTAGTA  
GCAGCACTTC TCAGATTTTC ATGTGCTTAC CACTCAGAGA TGGTGTAAA ATGCAGACTC TGATTCACTA GGTCTGAGTG  
GAGCTGAGA TTCTGCACCC CTAACAAGCT CTTAGTGAT GCTTATGCCA CTGGCGCACA GACCCCACTT GGAGAAATTT  
TTGTGGTGCA TACGGTCTT GTCTCCAGAT CTAATGAGTC TGAAGGACAG TGATGATTGA TTTTAAAT TTATGTTTAT  
TTAATTTAA TTAATTTAA TTTATTTAT TATTTATTT TGAGTGGAG TCTCACTCTG TTGCCAGTC CGGAGTGCAG  
TGCGACGGAG GCACTCATG CAACCAAGGC CTCTGGGT GACCGGATTC TTCCGCTCA ACTTCTGAG TACCTGGGA  
TACAGGCAGC TGCCAGCACA CCCAGCTAAT TTTGTATTT TTAGTAGAGA TGGGTTTCA CCACATTGGC CAAGCTAATC  
TCAAACCTCT GACCTCATGA TCCACCTGCC ACGGCTCCG AAAGTGCTGG GATTACAGGC GTGAGCCACC GAGCCAGCT  
GTAGATTGAT TTTGAGCAGT GGAAGTCAA GGAATTAGAA GGCATGCTTA AATGGAAAGT GAAATTTGAG AAAATTTAAA  
CTCATGAAAT AGTGGTGGT ATAACTCGT GATAAATTAT ATCTGGGAT ATAATTTAAT GAGATGGTAA CACATTTAGT  
TTAAAGAAAT AAGTGACACT TTTTGTGT GACACAACTG TCTTATCTT GGAAGGACA AGGAGAGAA GAAATTTAGT  
ATGTCTTAC AGCACTTTC AAAGGGAGAA CACAGATCTG AAGAGCTGGT CTCATGATGA ATGTGCAAGG TAAACACAG  
TTCAGCAGCT GCAATGTGC TTGCCAAAAT AGAGACAAAA AAATGTTTCT GAAAACAAAA TTTCATATAT GCCCTCTCT  
GAGGTGGCA TCATATCTC CTGTGTATCT TGGGTGAGC TTCTATCTG CCAGAATTTA GACAGTAGAA ACCAAATGAG  
GTGATAAACA GAGTCATTTT GCAGAAGAGT CAAAATAACC CAGCAAGAAA TGAAACCACA AATGCCCAAG GAGTCATTCA  
TTCACCATC AAAAGCTAAT AGAAATGAAC ACAAACCTACT ATGAAAATTC ACCCAAGAAC TTAACAAAAA AAAAAGGC  
TCATGGTGT TAGTGATGA GTATTCAATT TACCTTTGAC TTGTTCTAAA AACACACCAT ACTTCTACCC CACCTTCTCT  
CAGTCCGCT ACACAATGGT TTAGTGTA AAAAAGGAGG CAGTTACTG GAAAAGGAGG GTGCTGGGA CTGGCACTC  
TAAGCTGGA GTCAAGGGTC TTGAGTTCTA AAAGCATACG CGTTAAGAGC ATGATTCTG GATCCAAATG AGTATGGATC  
TCAGCATTGC CATTATTGT GACCTCAGGC TATTTATTT CTCTGTGCT GTTCTTTTAT CAGTAATGAA GATGTTTATA  
GACCTTCTC CCACAGACTT AAAGGCATAT TTCATGATT AAGACATGTA AACCATTCT AACAGTATAC AACATGGAAT  
TAATATTTGA TAAAGGTTTA TGATTATTGT AACTAATCT GTCACTTCT CAAGGCCTAT AGAAAACCTA CTTAATTAGT  
TCAACTACAA AAAGAGTTT AATGTGATAT CCACCAAGAT CATATTGAGA CCTAGAATTC TGTGATTCT ATGAATTAAT  
ACAGCCTTGG TCAATAAATG AGAGCTGGG TAAATAATCT TCTTTCTAG GCCTTCTAG ACCATCTGGT GAAGCATCA  
AGACTTATG TATTGGGCC AGCCTTCTT CCAACTTCA ACTCCACAC TCCTCAATAA GCTGAGGCT CAGAAAGTT  
CTGCTCAGT GCCCTGAAA AATGCTTCA TAGTCTCACT ACCATACCAC TGCTTACACA ATTTCTTCC TACAGACTGC  
CTTCTTCC TGCTTTCTC CATATACCTA AATCCTATCT ATCTTCTATA AGCAACCTC TTTATAACAT TTTCTATAAC  
CACAAGCCA AATGACCTT TCCTCTTAA ATATAGCACC CATTGGCCAT TACCATGCTC TGCTTGTAT TTTCTGATT  
TTTTCTTCT TATATTCTG TCTAATCTC CCAGCTAGGT AATAATTTT CTGAAATCAG GGACCAGGCT GACTCCTCT  
GCTGTCTCAA GAAAGCTTAG CAGTTTCAA CACAAAATG TCAATAAAC AACTATTAAT TGACTGATTA TAAAAATCA

GTGAACCATT AAACCTTAATA TAGCAATTTG CTTAGCATGG TAATTAGCTT TTTGCTAATA TTCTTCCAGC CAGTCTCTCC  
TCCTGTGCCT CAAGGACATC TAAAAAATA AAAATCTAGT TGATCTGCTT CCATCTAGTG GCAATTAATA CAGGTGGTTC  
CGGTAGCCAG AAAACAGCTC TGGGTAGATT GTGCCAGAAA ATACTTTTAC TCAGTAGGTG CGAGTTTGAA AGAAATCTTC  
ACATCTGTGG GTTTCCTGCC ACAGACATAG GGAGACCAGC CCAGAGAAAAG AAGCCTTTCC TCACTAGACT CCATTTGCAC  
TAGTAAAGAG AAGACAGAGT AATTAATAAG AATAAAAAAG ACCTCCACTG ATCGTACATC CTCATCCAGT TACCCCTGCC  
CCACTTCTCC TTACAGACCA AACATTTTAA AAGAGATGAC TGCTTGTTCT GTCTCTACTT TCTCATCTCT AGTAATGCTC  
AATGCTTGGC CGTCTGACCT CTGTCTTGAT GTCTGCACTG CAAATAGTCT CCCCACTGAC ACCCTTTTGG CATCCAGGGG  
ATACTTACTG GTTCTCTGG CAATGTTTGA AACCGTTCCC CTITCTTTGT TTCCTTGGCA TTCATTACCC CACACTCTTT  
CTCCTCTCC TTCTCCCTGC CTGGCAACAT CTTTTCATTT CTCTTCCCT TAGGTGACTT ATTAGATAAT GATGTTCTC  
TGGCTCCCAT ACTCTCTCC AGGTCTCTT CCATTCTTAA AGCACTCACA CCCTCCCTGG ATGATAGTAC CCACTCCTGA  
GATGGCAGT ACCTCCTGAA ATGTGAGGGA CCCAAATCCA CTCTCTCTGC CATAGCCTCT GTGCTTTGGA TAGGTCCAAT  
GAGCCACAGT GAATGATGTG CATACACCCA AAGCTCAGTA CCAACTGAA CCCATGATCT TTACCTCCAA AACCTCTCAT  
TCTTTTATGT TCCCTTCTCA GAAGTAAACA GGACTACCAT CCGCCAGTTT CCAGGTGAGA AAGATGATAA TTTGATTCTT  
CTCTCTCACT TTAGCCAAT TAACAGACAC ATTCAGTTAA TATCACTCC TCTTATTTC TGAACCCATT CTACTACTA  
GTTCCCTAGA CAGGCGCCAT CGGTTTTAAT CTAATACTG CAAATGCCTC CAAAACAAGT CTCTTTGAAT CCAGGCTCAC  
CTGTCTCCA CACTTGCCAT ACTGCTCTGC AGGGTGACCT TATAAGATGC CAGAGGTAAG GCTACTCACT GTTTAAACCC  
CTTAGTGAT ATCCCAAAAG ACCTCAAGAT AAAGCCCAT TACATGGCT TATACATTAG TTTATGATCT GGCTTCTGGT  
GCCTCATTTT TCCCACTTT TCCCTTTGCA TTCTAAGCAA TGGCCCATAC TAAGTTTGTG ATTGGTAGGA TGTTTGCCCA  
AACAGCATC CAATCCCTTC AGAAATCATC TCATTTCACT TCTAGCACTT TAAAGGAAGC TCAGTTGTTC AGCTGGGTAC  
TGAATATGTC ACCAAAGTCC TCCTTTCATA GTTTATTTTA CTAAACTCT CTTCTCTAAA ATTCCAGAGC AAGTCACTAA  
ACCCTAGATA CTGAGAAATA TTTTCCATC TTCATTTCTG CCAGGTGGGC CATCAACTTT CACATGCTG CATCTCTCC  
CACTGTGCTA TTTCTCCAGT AGAAGAAATT TGAGCTTCAA GACCAAACTG AAAAATACTT GCCTCCTGG GGAAGCTGTA  
GGTAGAATTC ATGCTCCCTA TCTTTCCAC ATTTCTGAAG GACAATGCCT GTTAGAGCAA TTGAATGCAA ATAGTCAATT  
GAATAAGCAT TTATTCATTT CTCAATAAGT GCTTGTTCAA TTGAATATTT CTAAATAAT ATATTAAAG ACAAGAAGAA  
CACACCACAA TGTTTTTAAC CCTCAGAAAA AATCTTGAGG TAATCAGAAA AATCTCCCTT TACATAAAT GCCCTTTCT  
AATAGGGATT ACTTGTTCTG TCATTCATTC ATTCAGTCC ACTAGACCA AAAAGCACAG CTCTGAAAGG AAGTAGTAG  
ATTTATCAC TTATCTGGTC ATTTGGATGA GGACCCAGG TAAATAAAT ACTATGGGT TAATGTGTCT AGCTAGAGCA  
GGAAGTAACT TAAGGAAGTA GAGAATGAAT CAGCAGATGT GGAACCTCT CGCCACTAAT AAAACTTACC TTCTCTGGA  
TTTCTTGCT GAAAATAGAA AATAGAGAAA AGGCATTAGC AAAAATTAGA CAATTTAAAG TTTTCAAGT AAGGGAGAAG  
GAAGACTCC ACTCTCAAAA CTGTCTTTG AAGTATATTA GGTATTTGT AGGTGGACCT TATCTGTGTC AAAGGAGATT  
TGAGGAACCT GCTTAATAAA CAGTGGTAGA CACTAATACA GAACAGACAT GTTGATGCAG ATGCCCTCTG AGGTTCCATT  
CCATTCTCCG TGCTACTCAA GAAGACAGAA 25411 TTGCTAAATT GCCTGGTGGC AAGACCCAAT ATGTCCATT  
AAGTGTTTAT CCCTTCCCAA TCTGCCATCT CATCTACCT GCAGATTCTT CCCTTGAGGG ACAGCTGCTA ATACTGTAAA  
ACTATGTGCC ATTACAGCTC ACAGCATCAT CTCTATGAGA ATCCACAAGA GAATTTCACT TTGGTCTGT TGGTAGGAAT  
TGTGCAGCT CATCTGAGTA ACTAATGTGT TTTATCTTA CAAACACAAG GAATATCACA TGGTCTCCT TTGACTGGCT  
GTAAGGAACT CTAGAGCTAG ATCTGAGACC CTCTCTACC AAGTATATAA AACTTTGTGA CATACATTTT TGTGCCATAA  
CTTCAACCTT TGTTCCAAAT GATTTTTGTA CCTTAAGTTT AAGTTGGCT TCTTTTTT TTTTTTGA CTCAATAAAA  
CATCAAGCTC ATTTATTATT GCGAAGAGCG AAACAACAAA GCTTCCACAG CGTGGAAGGG GACCCGAGTG GTTGGCCAA  
ATTGGCTTCT TTTTCTTACT TTTAATTAA TTTAATTTG CTATACTGAA CACATTTTGT ACTGTTCTCA CATTCTTTT  
GAAAAAAGCA GAATATAAT AAGTAGATAA CTAAAAAAA ACTCTTTGAG CAGAAAGAAT CATTGGGAG GCAATATATT  
TCAGTGGCTG TAAAGTGCCA TTCTAGAATC ATCTACCCA GGTGAAAGCC CTATTTGCC ACCTGTAGTG TAGTGTGAT  
TTGAACAGCT ACTTCTTTT CTAACTACA ATTTCTTAT CTGTAAAGA GGCATAATAA TTGTATCATC CTCATTGGGT  
TGATAAAATA AAATATTTC AAGTATTAG TTAGGTCCT AGCAGTGA CAGTGTGCA TTAGTGTTT AATCCTTTAA  
AGTATTAAAG ACTACTATT GAAATCTTT CTCTAAAAA TCAAGCTGT GATGACCAAG TGCATTGAG CAGCGGAAT  
CAAATCTGAA TTAATTTAG ATTCTGGTTA GCTTCACATA AATATTTTT TTAGGGATGA TGAACCTAAC AGCAATAGAT  
GAGTAAGAAT CTGTCTTAC TGAGAGAGTT TCATTTTGAA GAAAAAGGAA CTAAGGGGGC ATGTGTTCAG TTTATGCC  
TGGTCTAACC CTGTGTGTG GTTCTGGTG GAAATCTTC CAACCGAGGA AAAAACCAGT TCACAAATCT GAAGACCAGT  
GATTTAGAA GATGTATCTG GACTGGAGTC TAATCTCTGA CTCTGGGTCC TGCTGATATG GTATTTTGA GATTTGGCT  
AAAAACATCT TGCCCTGGTT TCCTATTTA CAAACAGGG CCAATGGTAG TGAATAATCA GAAATGATA ATGCCCTGGT  
CACAAAATGT GTCTAGATGA GCCCATGCAC AAGGACACAT GTTCTGGAA CTGTTCTCTA TCTTTTCT AAAAGAAAGG  
AGGGAAGTC TCCATACTAA GACTACTAGG GCAGGGGACA AAGTGCTAGA GTCAGAAGAT TCATCTGAGG ACAGAAGAAT  
AGGGGTGAAG GCTCTAGTCA CTTCAATTGGC TACCATGCTC TAAATAGTTA CCTGTGCCCT TTTTCTAACT ATTAGAACC  
AAAAAGCCTA TAAATCTCT CTCTCTCT CTCTCTCT GTGTATATAT ATACATATAC ACACACACAT AGACACACAC  
ACACACCTAA ACACACACAT AGAGATTTAT GACTTTTTAC TTTTATCCTT GTAAATGCCA TTAATATAT TTTGTCTAG  
ATTTAGCCTG GGAATGTAGC CATTATTTCT ACCATTGCCT CCATAGGAAA AATACTCTT ATGTTTTAAA GGACCAACCT  
ACAACATAAA TCTTTGGAAA GCAGAATCAT TTGTAAGTTG GTGAAAATGG AAGATGTTGT TTTATAAATG AAGACTTTT  
TTTTTTTT TTTGAGACA GGGCCTCACT CTGTTGTGGA GTGCAAGTGT GCTGTCTAG CTTACTGCAG CTTGACCTC  
CTGGGTCAA GTGATCTCC CACCTCAGTC TCCTGGGTAG CTGGGACTAC ATGTGCATGC TACCATGCCT GACTAATTTT  
TTGATTTTT GTAGAGATGT GTTTCGCCA TGTGCCAG GCTGGTCTG AACTCGTGG CTCAAGTAAT CCTCTGCT  
CAGCCTCAA AAGTGCTGG ATTAGAGGTG ACAGCCAAGG TGCCTGGCC ACAGATGAAG ACTATTTAAT GTTATCTTAA  
AGTACCCCTA AGCTCTCTAC CAAGCCAGTG ATCTTTGGG GCTTCTGTT TCTTTGTTG CATACTGTA ACTAGCCTAA  
CTGCCCGTA TCTGTTCTCT GTTGGCCCA CACTGATTC CACAGCAGTT TCAAGTTAT CGGTTTGA TCTGTACAG  
AAATGACTCC AAGGTAAAAA ATTTAAAAAC AACCCTCTA ATTTTCTTAC CCTTGCTTAT AAAACAGCCT TACCGACTA  
ACCCCTCACT ACATGCAAT GAGTTTGATT CTATCTTTT GATTCTACAA ACATTTATTA AAAGATTTTA GAATCGGAA  
ATAAATAGCT TCCTATTAA GGTGACTTAC AGCCCCAAG TCCTAAAAAT TATTAGACA ATAGCCACCT TATCCAGGG  
GGCAGTGTG AATAACCCAC CTTGTCTCT ATCCGTCACT TCGCCATCA TCGCCAAGG TAGGAAGAAA GACAGGACAA  
CCGGGGTCAA GATTTGAAGT CTCAATGGAA AGAATAATCA GTGGTTGGAG AAAACTGTCA TTCTCTTTT GCCTTAATGC  
AGTACTGAT ACTTACTT AGTACTGAT AGTACTAGT ACTGTATAAT ACTATAAGAT AGTGAGATTC AATCAGCACA  
GAATTTCTAA TAGCAAGGC AGAGACATTT TAACTGCTCA GTGCTCTCAG GTTATACATA GCTAATGAAG TTCTGCATA



TCAACAATCC CCACCCCCCT CACACACTTT GTCTTTCTGG ATTGGTTAGA AAACCTACCT AGCGCCCACT ATTCTCAAAAT  
TTAAATGAAA GATAAGATCA GAGTGGCAGC CAATTAGGGA CTGATAAATA ATATTTTGT AATTGCCAGT GTAAATGGAC  
AGGGGGCAAC CTTTACATAC CATATTCAGT GAACAGAATA CGTACTAACT AATTTGATGG AAGGAAAAAT AAAATGACAA  
TCAACTGAGC CCACAGAAAAG GCAACACAGA GCAGTTGGTT AGCAATTGTT TCGAGATCAT CCCTGAACCTT GAAACAGGTA  
TATCTTTTTT TTTTTTTTTT TTGAGACAGA GTCTACTCT GTCCACAGGC TGGAGTGCAA TGGTGCGGTC TCAGCTCACT  
GCAACCTCCG CCTCCCGGGT TCAAGTGATT CTTCTGTCT AGCCTCCCGA GTAGCTGGGA TTACAGGTGC CCGCCACCAC  
GCCTGGCTAA TTTTGTATT TTAGTAGAG ACAGGGTTTC ACCATGTTGG CCAGGCTGGT CTTGAACCTG TGAGCTCATG  
ATCCGCCCGC CTCGGCTCC CAAAGTGCTG GGATTACAGG CATGAGCCAC CACACCTGGC CAAAACAGGT ATATCTTAAA  
AGCTGCCCAA TGTCCATGAA TGTTACAGCC TTGAATGGTT CTTCCAGGTG AGTTTGGCCA AATGTGGCAC CATAACCCA  
AGGCTGTCTG CAGGCTAGTG GGTGCTCAC ACTTTAAAGC TGAGACACAC TCATGCCTTA AGGTAAGGG AGTGATAATC  
TGGGCAGCAG ATGTTAACTT CTCAAGGCAG TCCTCTCTCT CTTTCTCTCT CCAGTGACGG ATGTTGGAA AGCATATATG  
GTGCATTGG TTAGAGCTGT GGCCTTGGTG AATAGATACT TGGGAATA CATGGGAATT TCTCCAGGG TTAATGCAAT  
GCCCATGTGT TGGGAACCAG GTGACTCTT AAGAGGTCAG GTATTTGGGA GCAGTGCTT GAAACCTTAG TGGACTTAG  
ACCCACTTCC TAGTGGAATT GTAGCATTGA AATCCAAGGC ATGTAGGCTC TTAGAGGACA GAGATAGTGT GTCATTTTTT  
CAGAATTAAT TAAGAGCAGG CCAGGCGTGG TGGCTCACAC CTGTAATCCA AGCCCTTTGG GAGGCCAAGG CAGGCAGATC  
ACGAGGTCAG GAGATCGAGA CCACTCTGGC TAACACAGTG AAACCCCGTG TCTACTAAAA ATACAAAAAA TTAGCTGGGC  
ATGGTGGCAC GCTCCTGTAG TCCCAGTAC GCTGGTGAC AGAGTAGGC TCTGTCTCAA AAAAAAAA GTATTAAGA  
AGTGAGCTGA AATTGCACCA CTGACTCTA GCCTGGTGAC AGAGTAGGC TCTGTCTCAA AAAAAAAA GTATTAAGA  
ATTACATAAG AGCAAAGAAC CATTAGAATA TCTCACTTAG TTGTTATCAG CCTAGCAAGC TGCCTTGAAG GTAATAGACA  
TTTTTAAAG TTATCAGAT GAAAAGCGAA AATCAGCCAA CTGTTTTAA TGAAGGTGTG TCCTGGGCTG ATTTACATGT  
CTCCAGGGAC TGATGGCTCT AGAATGTAAG GCTTGGCATC CTGCTGTGT TGAATCTATC ACATTTAATT TCCTGTGGGT  
TTCTTTTTT TTCTTTTTT ACTTTAAAGT TGTGTTCTT TCATGTGAAG TTAACCTCAC ATACCTTTTT TTAATCTCT  
TGCCAGCCAA ATGATAAATG CCAACCCAGA GAATGCAGTA ACCATGACTG CCACTGGAAT GAAGAGGGGG TTATAATCAC  
CTCCTTAAT CATTGAGAAA CTTTGTCCA ATTCTGAAG AGAAATCAGT AAGGCACATA GCATGAGACC ACCAGCATT  
TTCTCTAGT CTATCTCATG ATATTGACT TTTTCTCTC TTACATCTCC CAGTAGTAGC CCATTGTAGC CTTATGACA  
GATGAGGAAA CTGGCATGGG AAGGCCCTG ATGAGTCTAC AGCATAGGCA AAGACTGGAC CAGCCTGTCT AGTCTAATGC  
CTACAGAATC TCAATGCCCA GATTTGTGGT TCATAGAGTT CTTGAAAATG CACCTAAAAA TGTGGCAAG AATGGTCATC  
GTTGATTTA GTCCTATGGA CTGTTCAAT GACTGGAAT CTGAAACACA GAGAAGAGCT AAAAGCTAA TACAATCTCA  
GGAAAAATAA AAGCCAAATG TCTGAACCTG ATAATTCACC AGTCAAAGGA AATCATTAAAT GCTTTTACTT TAAAGCAGTT  
GTGCAAAAAT AAGCACTGA TTTTACATG CCAAGGACCT GCATAATTT CTTTCCAATG CAGTAGTTAC CACTTCTCT  
TACTTCTCTC ACGAATAAGT AAAAGGGCAT GTTTAGAGAT ACTCTGTAA GTGTAAACTA AGTTCAATTT GGAGCCTCTA  
TTGAAAAATA CTGGTATAAA AAAAAATCTG TCTCTGATA CTAACATTG AAGGAATCTA CTTTTTACA TATTGGCAGA  
GGGTCTGATT CTATCTTAG TTCTTCCAT TACTTTGATG AACCTTTTCA AGGTGATTG ATCCCCACAC CCAATATAT  
GATTGAGAGA AGGCTCAAGT TCCCAGGAGC TCCAGACAGA AGGTACCTGT TGGCTTGATG AAGATGAGGA GGAAATGAAC  
ACTAGCTAGG CCTTAAAGGG AAATGTCTCT GATAGGCTA ATACACAGTC CTCTGCTAAA GGCTCCTG CCTCTCTG  
CTCATCCACT CTACTCCCTG GCCCTGGGCA CGCAGCACAC AGAGTAGGC ATTCTGACA CTTCTGTAG ATCCTACCAT  
TTAAAGACTT TTGTCATCCA TGCAGATAGT CTCAGGAGCA GACACAGGTA GCTATTCTT CACATGCTAG CTTAACATGC  
ATTTGCTTTA GCACCTATTG CCAGGCACTG TGTCAGGTGG AGGGTATACA AAGATGAACA AGACATGATT CTTCTCATAT  
ACAGATAGAT TTTGGAGGCA TTAGCTTAGT GATGATTCAG GAGTATCCAT TATTTGGGA AGTAGGTGGT CATTAGTGAC  
CTTTTACAGG CATTCAATG GGCTAACAGA GATGTTAGAT TGTAGTGAA TAGAAGAATG GGTAAGAAAGT AAATCAGTGA  
GTTCAGATTT TAGGAGTTAA GATGGCAAGA GGTGAGAACA AAAAAAGGAA ATGATTGTCA TTAAGGAGG AGGAAAGACC  
AGCCAAAGAT TTACAGTGA GTTAAGCATA CAAATTTATT TCTAGGCCAC ATATTCTTAG CAAAACAACA TGTAATGTT  
TATGTATGTC TTCTCTATA TCTGCTCATC CATCAGCTCC ATCGTTAAGA TTTCAAGTTT CCAGGACAAA CTTACTACT  
TTGACATATT GGACTAGGAT TTGACCAGAT TCCAGATGAT TCACAAATGG TTTTCTCTT CCAATTAAC TCAGTCTCT  
CTGAGCAGAT GAAGGTACAT GCAGAGGTAA AGCTGAAGCT GGCCAGGGGA TGGCTACAGT TCATGATCCC CAAATCTGGT  
GCTGATAGAG GCTCACACTG AATCACTTCA ATGAAAAAGA AAAAAAAA AAAGACAAA CAGTATTTCT GAGTAGAGAC  
CCTCCCTTGA GCAAGGATT TTAGCCAAA GCTGCCTGAC TACATTACTT GTGATATTGC TTCCAGGCTT TATTTCTTG  
AGAATGATGG TGGGTGGTGA ATGAGAGATG AAGGAGAGA AGCATTGAAA GCTGTGGGGA GAGGAGTAGC TACTCCAGGC  
TGCTGCCCTA GCTAAGGTGA CCTCCCTT CTGCTGAAGG TACCATGCCA TATGGCTCT GCATCAAGGG CTTTATGGG  
ATATTCTCAG AGAATCTCTG CCGTTTCATC TGTCTGATA TCTACCCAAG CATTGTGAAA AACATCCCAA TCACTGAAG  
CAAGTCCAAC TTCCGTAAAT TCCAGTAGGT GGGTTGACAG TTTTATAATT TCAATAAGGG ATTTGATAG CACTTCTAAG  
AATTAACCTA CTAAACTAA TGCATCAGGA GCATACTGT AGAAAAGTTA ACCAAAACCT CGTAAGTTCA GATGACATTG  
GTTTTCTCCC ATATGGAGAT AAGGTTGGCA GTTAAAAATG AAAAAAAA AAAAACCTAC CTATTTCAA ACTTGAAAAAG  
ATCAAGAGAT TGTGTTTTG TTTTTCAGTT GTTATTCTCC TAAAGTTTA TGCATGAGGA AAAGTAAAG TGATTTAAG  
AATAAGCCAA ATAAACAAC CAAGAAAGAC CTCCACTACC CTGGGAAGGA AACTGGTTGG TATTAAGTAG GACACCACAT  
AAAACAGGTG TTATTGAGAG GAGAAGAACC AAAATGTAAC TGAGGTTCAA CAAGACATTA TTTATGCAAT GGCAATGAGA  
AAAATAAAAA ACACAGTATA ACCATGCTGT ATTGCTATAA GTCATGTTAC AACTGGGAG ATGGCTTCAG GGGTATTTGG  
TTTTTACTT TGTGTTGGGA GGTTTTCAA AAAAATTTAG TTAGAATAAG TCCTTTGAGA AACATCAGAG TAGGTTAAAC  
AAAGTTAGGT TAAATTAGGC TCCTAAGTTT GACTTCTCAG CAACTTCTA CTGAATGTTG TGAATGTAAG CCCAGGATTG  
CATGACAAA CTTCTAGCT GAAGTTACT ACCTTGACAG GTTGGTTCTG GAGATGACCA GTTCCAAAT GGTCCACAGG  
TGGTTTCTT AATCCAGTT AAGTTGTTT CTTGAGGCA GCTGAAGGCA CACTGTGAGC TGAAGCTGAA GTTCCCAA  
GGGTGAGTAC AGTCCATGGT ACCCAGCTCT GGGGCTCCA AAGGCTCACA CTGAATCACT TCAATAGGGA AAGAAACAGT  
ATGGGGAAGA GTTAAGAGGA ACTGACGCTT GGATTTGAAT CCTAGCCCTG CCACTTGATA ACCATGTGCC TTAAACAAG  
GTTACTTGAA CCTCCAACCT TCAGTTTCTT CATCTATATA AGAGGAATAA TGAAATTGTG TTATCTTTAT CAAATTGATA  
TGGAACCTAA ATGAATTCA ATTAGCATAA GTCAAGGACC TTAGAACAAA GCCTGACTCA TCAGAAATTC TAAGTAAACA  
TTAGCTAGTC TTATATTAT TATCTTCAGC ATTATCTGTA GTGAGAATCC TTAAGCCAA ATAGGTGTA CTGGGAATGA  
CCAGCTTAGT CGGGAATAA CTATCACATC AGAGCCCTG AGTCTACTAG AGTATTGGGA GCAAGATGTT CAGAGAAAGA  
GTGGGTCTCC ATAATAAGCC TTCTTTGCAA GGAGAGAATA TAAAGTCTA GGAAGCATT TGACCTCAAT TCTGTCTCT  
ATTCTAGCTC AGTTCAGAA TTTTAACTCT TTTGATTTG ACAACCTCT CCAGAAACTG TATCTATTTC CTGTTCTGA

TTGGTGGTAC AATAGGTAAA TTAAAGACTT GGAAATCAAA GTTTTCACAT TTTAGACCCT GCCATGCCAT TTAGTAAACA  
GTACAACTTT CATGTCTTAT TCCTCATCTG TCAAATTTAA GCCATTATTG CTACCTTGCT CTAGAGACTT CAAGGAAGAA  
TGGACTCAAG GAATCAGAAG AATTTTGTGA TTTGGAAACT ATATGAGATG AGATTAGGGA GAAACATAGG AACTAAGAGA  
AAATGTTATC TTTTTCATT GATTTAAAGA GTATCTATTA TATATCAAGC ATTACTCTGG GGCTTGAAGA GCTTAGATT  
CACCTGTAG GACAAAATGG TAGGTAGAAA TTAATGGGTG GATTGTCATG TATGTGTGAT GTGTTTTAAT TGCTTTAAT  
TGATCAGTCT CCCTGTAGTA TGAATAATGT ATTTGAGGGG AGCTAATTTA AAATTGTGGA ACTCATCTAA TAAACTATTG  
CAAGAATCTA GAAGAAAGAT AATGACGGCA ATGGTAGTAG AGTTGACAAG TGGAAGACAA ATTAGAAAAA CACTAAGTTG  
TAAAAATTGG TAGAATGTGA CCCTGCATAA ATGTTGGGGG AGTTAAGAGA GTCTCATACC AGGGTGCCCA TGTAAATGGT  
GATTCCACAT ACTGAGATAA GAAATACGAA GAGAAAAGCT GACTGGGAAC AATTGGTTTT ATAGTCTTTT AAACATCCCA  
AAGGACATCC TTAGCATATT TGAGTTCAGA GCTGGAGATA GGCTTATCAG TCCAAAGATC ACATAGATTG GTGAGTCCCG  
AAAAGTCAGT AAGTTTGACC AAAGGATACA TGTAGATTAG AGTCAAGAGA GCAATATACA AAAGACAAAA GCTGAGAAAT  
TATAGTAGTT TATGGTCTG GATAAGTGCT CATGAAGGAT CTCAGGAGAA ATGATCACAG GTAGAAAAGAA TGAGAAAAGA  
GTGATATGAG AGAAACCAAG ACAAAGAAAA GTAAAATGTT AAAAATGAGT GAAATAGGCA TACCAATAAT TAAAAATGAG  
TAAAAATGGC ATACCAATAA CATAAGGGTT AAAAAATAGA GTTCAAAAAT GGGGTGAGGG TAAAGTATTA GGAAGGAGTC  
ATGGCCAGG GATCAAGTGA AATGAGTTAG ATCTATAGAT CTATTTTCAGT TGGTTGACAT TTAATGTAT TTTGGTTTTA  
ATTCTTTATT GTTTACAAAC ATTGCTTTTT TAAAAATTA AATTGTCCAA TTCAATTGAG GCTCACAAGC AAGTGCTCA  
TATATACAGG CATTTTGTGG ATCCCAAAGA TGCAATGATA AATAGGACAC TTAAGTATCT CAAGAAGTTT TCAGTACCAG  
AGGAGACGGA CAAGTGAACA GATGACTTCA ACATAAGTGG GAGAAATGAG GAAGAAATAT GTGGAGCTAT CAGAATAAG  
AAAGCTTCTT AGAAGAAACT GTCTTTGAAC AATGTCTTAA AGATGACATG TTTTTTGGCC ATGTGCAAAA TGAGAGAGAA  
GGCCACCAGC AAAGTCAGTG TGCTACAGAG CACATGTGTT AAGTGTGGAG AACTGCAAGA AGGAAAGGAA CTAAGTAAAG  
GAAAAAGCAA GATACTTTCT GGGTAACTCA GCCTCTAAT GATAAATGGC ATAGTTTCTT CCAGACCTTA GAGTTCTAAT  
TAATCTAACA AGCTCATTAG ATCGTGAGCT TCTTGAGAGC GGGAACTTAC CATGCTAATT CCTTATGGTA ACCCTGACAG  
CTTTTATCCC AACACTGTGC TTCTTGTGGT ACTCAAAAAG ACTTGTGAG AAGTGAGTCC AAGCTTCTATG CTGCTAGTAT  
AAATCTTTAC GGAAGAGTAA CAATATTGTG AAAGCAGAGC TTTCTGATCA AAACCTCCCA TTTCTCAGAG TGGCTAGTAT  
CATTTTGTTC CAACCAGCTT CATGATAAGC TATAATGATT CCTGTGACTT TACCTAAGAA GAAGCAAAGA AAGGAAAGAG  
ACTTACCAAA CTGACACTGG GGCCCATAGT ACCCCACATC ACAGTTGCAG GTGTAATTAT TGATGATTTC TACACATTCT  
CCATGGCCAC TGCATGACCA GGGCTGGCAA GAAGCTTTAA GGAGGTCAGA AAAAAATAT TTAATGTGA TTACATTTTA  
GTACTCAAA GATTTTCTTT AGACATAGAT AACCTTTTGT CTGAGATGAT TTAATAATC AGGAAAGGTT TATTTGTAAA  
TTCTATAGAT AAAAATCATA TGCTAAAATT TTTACGTTA AAGATACATA AGCATATAGT CATAGGCTAT TATTTGCTTT  
TGGAATGAAA TTACCAATAC TAATATTCTG TAACACTTAT AGGAAACTTA GTGGCATACC TTGAAACTCT TGAAATTAAT  
TGTTTTAAT GAGTGAGAAG GTTAAATGAT GACCTGACCT CAATCATTTT TGCATGCAAT TATTTCTTGG CAATCCCTTT  
CTTTATAGAA ATCAAAGATT AAAAAGTCCA AATTTGCTAA AACGGTAGAG TCCAATTTAT AAGAGACCAA ATTAATATG  
GTTCAATTAT AAAACATCAC TTGGAAAATG CTGGCTGTTT TGGAATTGTA GAAGATTTTA CAGAAATATT CATACACCAA  
AGATAGTGCA ATTTTATAT AAAATTATAT AAGGTTAGAC CAAGAAGGAA GCACGCAGCA CCACACTCTC TACTTCACAA  
TGTGAAAAT GAGGTGATGT GAGCTAAGT TTCCAATG GGGCAGCTGT CAGCTTCTCC TCCCCTGCTT TATTATCAAA  
GGCACTGATT GTCTAGCTCT TCCTCTGTAC TTCCTACGTA GATCTATCAT TTTGATGTA CTTGATTAG GGGTATAGCT  
TTTGTGCACA GGGACAAATC TTACACACCA AAAATTCTTA GGAGTGACAC GATGCAAGAT TATATAGAGG GCTAGATGTA  
TTTTAGAATG AACCAGAAGC TGTTCTCATC CCCCCACCTT TCCATGGGGT AAATCTGAGT ATTCTCTTAA CCGTGGCCCT  
TCCTGAGTCT GAGGCAGCAT AGCCGCTCTG TCACTCCCTA CCTGTGTAAC AGAGGGGCTC CTTAGTTTG TGGCAGGCGT  
CATCGTTCCA TTTGCTGCA TCTTTGTTT TCTTGATATA GATCTCCACG CAGTCTCTCT TGTCTTCTT GTTGTGGGC  
TCACCATCTC CCCAGTTCTC TGCTCTTCA GTAAGAGATT TGTGTTTCC CACCCAGTC CATATTCTCT CTATCTCCG  
GATTCCTATC CAGTAGTAAG AACGACTGAA AGGCAGAGTC TTTCTCAGAT ACTCAATTTT CGCCTTGT TTGATGGCAA  
CTAAATCTGT GTAATTGTCT CGGCAGAATC TTCTAGCCCT TTGCCAGTTC ATGGGTTTTT CAGAATAATG GTAAGTCCAG  
CAGTCGGTTC CATGATGTGC CAGGAAATCT GCAAGACATC AGTGTGACCT ATGCAGACTT ACATAATGTT ACAGCTAAAA  
AGAACCTAGC ACTACTCCAG GCTGAGCTAG ACACCTAGAG ATGAGGAAAC AGAGCCTAAG AGTGTATGTG ACCATCTCAG  
GATCACAGAA TAGTTGTTG CAGATTGAA GTAGAACCTA GACCTTCTGG CTGAAATATA AGATGCTTTT ATCTAAGGTT  
CTATTGAAA CAAATTAGT GGTTTTCTAG GTTTATTTT TTTATTAATT TTTTCTCAA ATTATTTCTG GTGAAATTTA  
ACCAACATAT TTTAGACATT CATATTCTT TTTCTTTG GCTGTTAATG ATTTACAAT AATTACCGT TAATACATTA  
TAACTATACA ATTTACGTAT ACTTTTAAAT CCTGGAATCA TTTCTTGAAG GCCAACACAT ATGTACCTAT GGGAGAAGCA  
TAATAAGGAC AGGAAGAACA GTGACATACT TTTAAGTAAC CTCTTTTACA TAAAAACAT TTTATTTTAC CATAGGAAGA  
ACTGCTTCTG GAAAAGCCCA ATATACCACT CAACTCTTAT ATATCTAAT GTATAATTTT TAAAAAGAAC AATTACAAA  
GCCAAATGGT ATAGGATTAT GAAATTCATT AGATCATGTT CTATACACAA AGAGACTCAA CTGATGATGT TTAATAAACA  
TATGGACCCA TCAAAATATGA GGGCTTTGAA GATATCTAAT TAAACACATA ATTACACAAT GACTTCATAA TAATATATGG  
CATTCTAAGC ATGGTATGAT CTACATGAAT CACTATTTAA TACAGTAAAG AAACAGATAT AATTACCGT AAAGAGCATC  
ATAAAATAAA CATTTTGAAC AGAGTTTTGA ATGAGCATTC CACTAGAATG CAAGTTCTAA GAGGGAAAAA ACTGTTGTGT  
CCACTGCTGT ATCCTTAGTG CCTAGCATAA ATTTACACA TTGTAGGGAC TCAGAAAATA CCTGTTGTAT GAAAAGAGCA  
CTAAGTTTCT ATGTGACACA GTGCAGACAT GGCATAAGGA ATGTGTGAAC GGGAGAGTTA GCATGTTTGC TTGGCTAGAG  
CTGAAAATCC AGGCTAGGGA GAAAGAAGAC ATTAGTTTAC TTAGGAAATG AAAAAACCAAG TTCAAAGCTA TTGCTGGAGA  
GTCTTCAAGA ATCAGATATA AAATTTGTCA CAACAATGGG AGAAGGACCA AAAAAATGATA AACCCTCGTC CCTTAATAAG  
CTCGATTGT AATTGTAGAA ATGACATTAA TGTCACTGA ACTATGAATA AAAAAAGAAA AATGAGGTGC TAAATATTG  
GTACAGATTG TAAGTACCTT AACAGAGATT TCTTAATTA CATTAATCTT TTATAATTGA GGGATTTTGT GGGGTTATTG  
GGATTTGAAC TCTACAGCAT GGGCTATTAT AGGTTAAAAA TAGTGTTCAG GAGTTTCTGG GGAAGAACTA AAGGTAAGAA  
GAAAAGAGAT GTTTACAGAA GGGATAGAAT TAACAGCTCT GTGAAATAAT TTTCCCTTAG ACTATGTATA ACTAGTGGAT  
ATTTAAGAAA AATGAATATA AGTAAAATAG ACTTAGCGAT ATATAAATAT CATAACATAC CACAACAGAG CATTGTCCAC  
CCCCCAACT TGAAGATGTT CCATAAGTCC CTCTGGGTGC TCTGACATT CCATGGAAAT ATCTGCAAAAT GAAATACAAA  
ATTATATTA GATGTATACT CTAAACCAC ACATTTATAG CCTTTGAGGT GGTGCTTACA ACTTTCTTAA TAATCAGAAT  
AAAACACATA TGCTACTAA CCCTGTCTGA AGTAACAGGT TCTCAGACA TGATGAAAAA ATTAATCTCA ATTTACATCA  
GAACTGATGC ACAGTTTTGT TTTGTTCTAT TTTATTTTAA CGCTTTAGTC TCAAGTTGCT AATCGGTACT GGCCTGAAT  
TTTTCTATGG TTTGGTAAT TTTATACCTG CTTTCTGCT GAGCTATTAG ATAAACTAT TTAATATTTA CTATGTATAT

TTTTAAAGT ATTGTTGCTG CTTAATTAAC TATTGATGCT TATATTAAAT GTTATAGCCT CACTCTTGAT CATAATGGGT  
CAATGCCTCA AATACCTAAA AAAAAAAAAA ATTAGATAGC CAGACACCAG GAAAGAAAAG TATTTCTTTT TTTAATAAAA  
AGAAATACCT TTTTGAGCAA CTGAAATGAC AAAGTCACAA ATTTCTGCA CACCTTAAAA TATACTTAAT GTAAATGACG  
AGTTAATGGG TGCAGCACAC CAACATGGCA CATGTATACA TGTGTGACAA ACCTGTATGT TGTGCACATG TACCCTAGAA  
CTTAAAGTAT AATTTTAAAA AAATTTCTATC TTCCAAAGCA TATCACTTCT CAGGTAGACA CAGTGTATAT TGCAAAAGAT  
CTGATTTCAA TAGTATTCT TCAAGAGTCT CCCAGAGAC AAAGTCAAGA AGAGGAAATC AGCATATCTG AGAAGAAAGA  
TTTCAGGATC ACTTTTTTTG AGGGTCTGAG AAAATGTTTA GTTCTATAT TATTTAAAA CAGAATTGAA ATGGGGTGAT  
TCCTATCCTT GCCACCTGCC TCTACAACCC CAAGAGTTTC TATCTGAGCA TCTAAACGTC TTTTAGGCTG AAAGGCTCAC  
CATGGCTTTG CTGGTCTCT CTCTAGTTCT TCTGCAGCCC ATTGAGCCTC TTGACTTAGC ACAAGGGTCT CAGGTCTCTG  
CCCAAAGGGA GTGTGCTGTG CTGCAGGTAG ACTGCACTGA ATGTCAACAG AAAGCCTTGC TTTCTTTCT TCTCTAACC  
CAGTCTACA TCCTCTCTCT CCTCCCTTT TCCCTCCCT TCCTCTGCA CTCTCTTTC CTCTTTCCC ACCCTTTCC  
TAGACTGGCC TCTATTGCCT CCCACTGAGA CAAAATGAA CTGCTGATCA GAAAGTAATG TGACTAGATT CTCTCTCTCT  
TCCCTCTTT CTATCCTTCC TTCCATTCTC CTATGCATCT TTCTTACCC TCCTCTCTCT TCATCTATTG TTGTGTCTGT  
TCTTCTCTCT CTCTTTTTTC CTCTGCTCC TCTTCTCTA CTGTCTTGT TCTTGTGTTT TGTGTGTTT TGTGTCTCT  
CTCTCTCTCT CTCTCTCTCC TCCTCTCTCT TCTTTTCCAC CACCTCCCC TATCTTTTTC ATAAATGCTA AACTAECTCT  
TGGCTACCTG TGGTAAATGG CCCTTGGAAA TTGCAAATAC TACAAATCAA AACTGCATT CAGACATATT TATGATGTT  
GCAAAACTTC AGTAGAGCTA AGCAGTGGAC TTGACTCGTT TCGGTTCCTT CACCTCCGTC TTTCTTGTCT CACCACCTAG  
TGGACGCTCT TGTTAGTGGC ACTTCTGAA GTTAACCCCT GAAGAGAGCC CATGCTCTCT AGCTTTTAC CGTGTAGGTT  
TGGGAGCCTA CAAGTACCTT TAATATTCTT GGACTATAAA ATGAGATGGT TTTATAAGAC TGCATGTGAA ATTAGGACCC  
ATATGATGAA GGACAATAAA AAGGAAGACC CACTGATGTG AGTCAATGAG TCAAATGCAA ATCAGATTG CATTTTTAGG  
AAAATAATAA TAACAACAAC AAAAATCTG AAGCTCAGCG CCCCATATT ATTATATTGT TTAATCTTTA TAACAGCTCT  
CTGCTATAGA TATGATTATT ATCCCCATTC TAAAGAGTCT CAAAGAGGTT AAGAAACAAA TTCAAAAAT AGCGAAAGAC  
AAGAAATAAC TAAGATCAGA GCAGAACCAT AGGAGGTAGA GACACGAAAA AGCCTTCAAA AAATCAATAA ATCCAGGAGC  
TGCAATTTGA AAAGATTAA AAAATAGATG GACCACTAGC TAGACTATA AGAAAGAAGA ATCAATAGAC ACAATAAAAA  
ATGGTAAAGG GGATATTACC ACTGATCCCG TAGAAATACA AACTACCATC AGAGATTACT ATAAACATCT TTACACAAAT  
AAACTAGAAA ATCTAGAAGA AATGGATAAA TTCCTGGACA CATAACCCCT CCAAGACTA AACCAGGAAG AAGTCAAAATC  
CCTGAATAGA CTAATAACAA GTTCTGAAAT TAAGGCAGCA ATTAATAGCC TACCAACTAA AAAAAGCCCA GGACCAGATG  
GATTCACAGC CAAATTCTAC CAGAGGTACA AAGAGGTGCT GGTACCATT CTCTGAAAC TATTCAGAG AATAGAAAAA  
GAGGAATCC TCCCTCACTC ATTTTATGAG GCCAGCATCA TCCTGATACT AAAACCTGGC AGAGACACAA CAAAAAAGA  
AAATTTGAG CCAATATCCC TGATGAACAT CATTGCGAAA ATACTCAATA AAATACGGCA AACTGAATCC AGCAGCAT  
CAAAAAGCTT ATCAACCACA ATCAAGTTGG TTCTACCTT GGAATGCAAG GCTGTTTCAA CATAACAAA TCAATAAACA  
GAATCCATTA CGTAAACAGA ACCAATCACA AAAACCACGT GATTATCTCA ATAGATGCAG AAAAGGCTT GGATAAAAT  
CAACACCCCT TCATGCTAAA AACTCTCAAT AACTAGGTA TTGATGGAAC GTATCTCAA ATAATAAGAG CTATTTATGA  
CAAACCCACA GCCAATAGCA TACTGAATGG GCAAAAATG AAAGCGTTCC CTTAATAAAC TGGCACAAGA CAAGTATGCC  
TCTCTACCA CTCTGTTCA ACATAGTATT GGAAGTTCTG GCCAGGGCAA TCAGGCAAGA GAAAGAAATA AAGTGTATTC  
AAATAGAAGA GAGGAAGTCA AATTGTGCT GTTTCAGAT GCATGATTG TATATTTAGA AAATCCCAT GTCTCAGCCC  
AAAATCTCT TAACTGATC AGCAACTTCA GCAAAGTCTC AGGTACAAA ATCAATGTGA AAAAAACACA AGAATCTCTA  
TACAGCAATA ATAGACAAAC AGAGAGCCAA ATCATGAGTG AACTCCCAT CACGATTGCT ACAAAGAGAA TAAATACCT  
AGGAATCCAA CTTACAAGGA ATGTGAAGGA CCTATTCAAG GAGAACTACA AACCCTGCT CAAGGAAATA AGAGAGGACA  
CAAATGAATG GAAAAACATT CCATGCTCAT GGGTAGGAAG AATCAATATC ATGAAAAATGA CCATACTGCC CAAGGTAATT  
TATAGATTCA GTGCTATCCC CATCAAGCTA CTACTGACTT TTTTACAGA ATTAGAAAAA AACTACTTTA AATTTCTAT  
GGAACCAAAA AAGAGCTTGT ATAGCCAAGA CAATCTTAAG CAAAAAGAAC AAAGCTGGAG GCATCATGCT ACCTGACTTC  
AACTATACT ACAAGGCTAT AGTAACCAA ACAGCATGGT GCTGGTACAA AAACAGATAT ATGGACCAA GGAACAGAAC  
AGAGGCATCA GAAATAACAC CACACATCTA CAACCATCTG ATCTTTGACA AAGCTGACAA AAAGAAGCAA TTGGGAAAGG  
ATTCCCCATT TAATAAATGA TGTGGGAAA ACTGGCTAGC CATATGCAGA AACTGAAAC TGGATCCCTT CCTTACACCT  
TATATAAAAA TTAATCAAG ATGGATTAAA GACTTAAATG GAAGACCTAA AACCATAAAA ATTCTAGGAG AAAACCTAGG  
CAATACCATT CAGGACGTAG GTATGGGCAA AGACTTCATG ACTAAACAC CAAAAGCAAC AGCAACAAAA GCCAAATTTG  
ACAAATGGGA TCTAATTAAG CTAAGAGCT TCTGCACAGT AGAAAAA AAACTATCAT CAAAGTGAAC AGGAAACCTA  
CAGAATGGGA GAAATTTTT GCAATCTATT CACCTGACAA AGGGCTAATA TCCAAATCT ACAAGAACTA AAGTTATGCA  
TACAAGAAAA AACAAACAAC ACCATCAAAA AGTGAGTGAA GGATATGAAC AGATGCTTCT CAAAAGAGA AGTTTATGCA  
GTCAACAAAC ATATGAAAAA AAGTCTATCA TCACTGGTCA TTAGAGAAAT GCAATCAAA ACCACAATGA GATGCCATCT  
CATGCCAGTT AGAATGGCGA TTATTAATAA GTACAGGAAAC AACAGATGCT GGAGAGGATG TGGAGAAATA AGAATGCTTT  
TTACAGTGT GGTGGAAGTG TAAATTAGTT CAATCATTGT GGAAGACAAT GTGGCGATT CTCAAGGATC TATAACTAGA  
AAAACCATTT GACCCAGCAA TCCCATTACT GGGTATATAC CCAAAGGATT ATAAATCATT CTACGATAA GACACATGCA  
CACTTATGTT TATTGAGGCA CTATTCACAA CAGCAAGAG TGGAAACCA CCAATGCTC CACCAATGAT AAATGGGATA  
AAGATGATGT GGCACATATA CATCATGGAA TACTATACAG CCATAAAAAA GGATGAGTTC ATGTCTTTG CAGGGACATG  
GATGAAGCTG GAAACCGTCA TTCTCAGCAA ACTAACACTG GAACAGAAAA CCAACATTA CCCATTCTCA CTCATAAGTG  
GGAGTTGAAC AATGAGAACA CATGGACACA GGGAGGGGAA CATCACACAC TGGGGCATGT CAGGGGATGT GGGGCTAGGG  
GAGGAACAGC ATTAGGAGAA ATACCTAATG TAGATGACAG GTTGATGAAT GCAGCAAAAC ACCATGGCAC ATGTATACCT  
ATGTAACAAA CTCGACGTT CTGCTCATGT ATCCAGAAA TTAAGTATA ATTTAAAAA AGTTTAAAAA AAGAAAGTTG  
CCTTAGTCAC ATAAGTAGTA AGAGACATGG TTGGGAATTT GAACAGAGGC CAATCAGTTC CAAATCCATG CTCTTGATCA  
TTAAGCTGAA CTTATGGCAG GAAGTTGGA GACATGGTAA AATGGGAGAA AACGTGGAGC CAGGGAGACT TGTGAAAGTG  
CCAGTGCTCC CACTATACCC TGAAGAAGT ATCTAGACTT ACTTTTTTCT AAGTCTCTC CTCTAATTCT CTCAATCTCT  
CTCTCTCTT CTCTAAGAGA TGGGAATGCT GCTCTGTAC TCAGGCTAGA GTGCAGTGGT GCGATCATAG CTCATTGCAC  
TCAAGGAATC CTAGGGTCTA GTGCCCCCTC TCCTCAGCC TCCCATGTAG CTAAGACTAC AGGCACATGC CCAACCCCTC  
GACTAATTTT TTTATTTTTT ATTTTGTAG AGACAGGATC TCATATGTT GCTCAGGCTG TAATTCTGTC TTGAAGCTTG  
TCCAATCAGG CTTTCAGCCA CACCAATTC CTGAGACTGC TCTCAACAAG GTCCTACACT TCACTAACAC AACAGCCTA  
TTCTCCATCC TCATCTTACT TCACCAGGGA GCTCTGTTT TTCCTCTAC TCACTGGCT ATTTCTTCTG TATCATGTGT  
TGATTCTCCC TCATCTCCCC AACCTCCAAA CCCTTGGAGT ACTCCAGAGA TCACCGCTT GCTCTTCTGT GTCTAACCTC

ACTAACTTGG TGGTCCAATT CACACTCTTG ACTTTGAATA CCATTTAAAT GCGAACGAAT TCTAAATTCT GTACAACCAAG  
AACCATTCTC CTGTAGCCAA ATGCCTACTC AACATCTCCA TCCCCAAACA AATTTAGTTG TTCAATAAGC CTCTCATATT  
TTACATATCC CAAACTGAAC TTCTGAATTT CTCTCCAAT CTGTAGGGCT CTCTCCACAG CCTTCCATC TCAGTGGATT  
ATAACTCCAT CCTTCCAGTT ACTCAGACCA AAACTTTTTG AGTTAACTGA GACACCTCTC TTTTTTTTCA CAAGTCATAT  
CCAATGTGTC AACAAATTTT GGTAGTGGAA ATATTGCGGG ATTTTTTAAG AAATCAGAGA GACCGATGGG GTTCAGGAGG  
ATATTTATTA TTTAGGTGCA CTGGCCAAGT CAGATTAACA TCCAAAGGAC TGAGCCCTGA ACAAAGAGTT AAGTTACCTT  
TTAAGCATTT TGTGGGGTGG GAGAGAGGGG TATCTGTGCA GGGGGAAGCA TACTACAGAA GTGAGAAATA AAGACAGTTA  
TTCAATTAAT TGAGACATGC ATTACATCAT TTCTACTTT TCAAGAAGAA ACATGTTTTG CGACTTGAGT TTATCTGTCT  
AGTGACCTTG CAGCTGCACA GCTAGAGAAA CAGGGTCTTC ACAATGCCTG GGAAAGGAGG AGAGGTAAGT CTCCTAGCC  
ACAGAAAAAC AGGCAGTTAA TTTTAAAGG GCTCCAGCTC TTCTCTTTC TCAGGGGGAG TTGGGTTTTG TTACATACAA  
CTGAGTTTCC GCTTACACAT TATTTAATTT CTTTAATTC CTGTTCCAAA AGAAGCCAGA TACAAAAGGT TACATGTTGT  
CTGATTTCCAT TTATATGAAA CATATAGAAG AGGTAATCC ATAGAGACAG AAAGTAGATT AGAGTTTCCC AGGGCTGAG  
GAAGAAATGG GAGCTAACTG CTTATAGGT ACAGAGTTTT CTCTGTATAA AAATATTTTG GAACATAGATA GACATTTTGT  
TAGGCCATTC TTGCATTGTT ATAAAGAATT ACCTGAGACT TGGTAATTTA TAAAGAAAAG ATGTTTAATT GGCTTACACT  
TCTGCAAGCT TTACAGGAAG CATGGTGCCG ATATCTGCTC AGCTTCTGGT AAGGCCTCAG GAAGCTTACA ATCATGGCAG  
AAGGTGAAAG GGGAGCAGGC ATATCACATA GCAAAAGCAG GAGCAAGAGA GGGATGTGGG GAGGTGACAG TCACTTTTAA  
ACAGCCAGAT CTGTGAGAA CTCATTCACT ATCATGAAGA CAGTACCAAG AGGATGGTAC TAAATCATTG ATGAGAAACC  
CCACCTCAT GATCAAATCA CTCCCAACA GGGCCACCT CCAACACTGG GGATTACAAT TTGACATGAG ATTTGAGTGA  
GAACACGGAT CCAAAACATA TCAGAGATGG TGGTTATACA ATGCGATAAA CGTCACTGGA TTGTACACTT TAAGATGGTT  
GTTTTATGTT GTGTGAACCT CACCTCAATA AAAAAAATA TTTAATGTAC ATTACGCCAA AAGAAGATTT GGAATAGGAA  
AGGTCAATGA GATATATTA CAGCCATTG ATGGGTGGTA AGGAAAAGAG TGGTTATTAG ACTGTTTTGT GGCCCTCAA  
AGGTAGAACT AGATCGAGTT GGTGAGCATT ATAAACCAT CACAAAACCC TGGAGAGAGG ACCCAGTGCT GAAGAACCGT  
TTGCCTGCCA TGAGACATGA GGAAGTACC AGTGAATGCC ATTGAAAGCA GCATCCCTGG GTCCAAGGGA TGGTCAAAGG  
ACCACTACCC AACCTTCCC TAGCCTACGC CTCCATTACA GATGACCGCA AGATTTATTG GCTCACTGCT GCCAACCAAG  
GCTGCATCA CTGCAGTTG TATCAGTTA TCATGGTAA AAGGAATGTG CAGTAGAGAA CCAACTACT CCCCCTAC  
CTCCACAATC CTATCAGGAC AAATCACCAT GGCTCACATT TCCTTACATT TGGCATGTAA GCCCCTTA CTGTCTGTCA  
TCTATCTCT ACACAGTTCA CTTAACTGT TCTCTCTGA CCAACCTTG ATTTTCATCC CAAATGCTTC CTGCCATCT  
CTGGGATTC TGTCTTACC ATCACCAAAC TCCCCTCAAT CTTCAGTTT CTGTTTCAA CTTTTCTCT ACCTCCTGC  
TTTGTCAAT GCGGACTGC CTCCCTAGGA CATCACTTCC CTGTCAGATC TCTCAAGATG ACAATATTA TTCTCCACAC  
AGCACATACT TCAGGGTTGG AAGGCAGGG CAATCTTCTC CTTTATAATG AGTGCCCTCT ATATATGTTT ATTCATCTGC  
CCTCTGTAA AACACACACA CACACACACA CAAAGAAGAA ATAAATAAC TCTGCTTCT TGAAGCTTGT GACATCTGAGA  
TAAACCATCT CACTGTCTC ATTGTAGTA CTTCTCACT CTTCTGCAA GATTGGCTTT GGCACCTAGT TCTGTCTCT  
CCTTCCCTG TAAGCACTTC TCATAGTCTT ACGGGACTTC ACCATCCATG GCACAACCAA TACCACAGCC CAGATCTCA  
GCTCTCAAT GACATTTTCC TCCACTAGAC TTGAGTACC TCCTTCCCTA GGCACAGCCT CAACCTCGAC AACACCTAAG  
ACTGTACCGT CTCTAAAGTC ACATGTTCAA ACACTTCACT CTTTAACCAC TGTCTCTAT TCTTGCAAGT GTATTGCTCA  
AGTATCTCAT TGCAATGCTT TTTACTTCTA CCTCATTGAA CCTCCAGGCC ATTAACATT TCCTTATTC TAACCATCAG  
GTTTCTCTT ACTTGTGTT TGTGTTATTT GTTTCTTTT TTTTTTTTT TTTGAGACAG GGTCTCACT TGTGCCCCAG  
GCTGGAGTGC ACTGGTATGA TCTCGCTCA CTGCACTC CATCTCCTG GTTCAAGTGA TTCTCATGTC TCAGCCTCCC  
GAGTAGCTGG GACTACAGGT GCATGCCACT ACGCCTGGCT AAGATTTGT ATTTTTATTA GAGAAGGGGT TTTGCCATGT  
TGGCCAAAGT GGTCTCGAAC TCCTAACCTC AGGTGATCCA CTGCTCAG CCTCCCAAAG TGCTGAGATT ATAGGCATGA  
GCCACTATGC CCCACCTGGT TTCTCCTTAT TTATTTCAG TCTATGCTGC ACTATTAATA CTGCCTTGAC AAAAAATATA  
ATAGTGAGAA AATTATGACA GTGAAAGAGA TCTGAAATAA TCAACCCCA TCTTGCTTT ACCTTCCAGA CTGCCCTTAA  
TAATCTCTGA GCTTGGGCCA AGCTATCTT GGCAGAAAT TAGTTTATAG TTTAAATGAT AATAGCCCTT TCCAAAACCT  
AAATCCCTT TGTAAACTA ATAAAGACC ACCAATGAAA GTTTAGGAGG ATGAGAGGAG CCTGAATCT CTCTAAGGTG  
AGATGTAAC AATTACCAAC TGTATTCCG GAGGTACAA GATTGCAAC ATCGCCAAT ACTCCTGCAG ATAACAGCAC  
TATCATAGAA TCTGATTGGC CTTTGAGAT GTCTTTTTCAG ATTCTTACAT TTCAACTGGT GGCTCTACCT GGACCCATCA  
ACAAGTCTG TGGCTCCACC CAGAAGCAGA CTTAACATGC ACAAGGACCA TTTCCACAC CGCTATGATT GCATCCCAAC  
CAATCAGCAG CAACCATTC TCTGCCTGCC AAATTATCT TGAATAATCT TAGCCTTGA ATTTGGGGG AGGCTGATT  
CAGTAATAAC AAAACCCCG TCTCCATTT GGCTGGCTCT GCATGAATTA AATTCTTCT CTATTGCAGT TCCCCTTG  
ATAAATCACC TTTATCTGG CAGCAACAA AAGGAACCCA TTGGCAGTT ACCTGTGG CAGATATATC TTGCTTCAA  
AATTGGATT TGTTTAATG AATTATTCT GTTTCTTGA TATTACAAC TGTGAATGTT GTGTCTGAAT TCTTTTATT  
TCTTGTGAA AAGAACTATA TTGCTACAGC CAGTACATAC AGATGGATAG CTAATTACTC AACACGGGGG GATGTGACCA  
TCACCGCACT GTGCAATGA ATGTTACCCA TTGTCCACTT TCCCAAACCT ACATAGTGT ATATGGTATA TGACCAATC  
AACGGTGGCA AAGCTCCAGA AATACCACAT AGACATCAGG GACACTTAA ACTAATCAGC CTATAGTCT TTTTCAAGTAA  
TTTCCAAAC TGGTTGTGCA TCCAAATCAG TTGGTAACAT TAAAAAACA AAAAAATATA CACGCAACAT TCGCTCCAA  
TCTCTCTT AGAATAAGG CTAATAAGG TCTGCTTTT ATAGACTCTA CAAAGATGTA TTACCATGTA AACACATTC  
TAGGACCCAG GCCCTTGTA TTTAAAGGTT TATCTAAGTA ATGGGCCCTG AAGCTTAATT TTCATTATCT TCAGGGCAAA  
TTACCTGTGG GTTAGGGTT AGGAATATAT CTCTCTGTGT ATGTGTGTGC ACATTAGCAT GTACGCTGT GTGGATTTT  
TTTTTTTTT TTTTTTTT TGAGACAGAG TCTCGCTCTG TCGCCAGGCT GGAGTGCAGT GCGGTGATCT CTGCTCACTG  
CAAATCCGC CTCCAGGCT CAAGCGATT TCTGCTCA GCCTCTGAG TAGCTGGGAC TATAGGCAG CACCACTATG  
CCCAGCTAAT TTTGTATT TTAGTAGAGT TGGGTTTCG CCATGTTGGC CAGGATGGT TTGATCTCT GACCTCGTA  
TCCACCCGC TCCACTCC AAAGTCTGG GATTACGGC GTGAGTACC ATGCCAGCA CTGTGTGGA TGTTTAAGC  
TCCAGGTGA GTGAATACAA AACTAGATCT TCCCCTCTG TAGCATCTGT ACTGTTTACT CTATGCATCT CAATATTTT  
TCTTTAGTA TCTTCTCTT TCTCTCTTA TTACTTCTC TTGTGCTATT TTTACACCTC CTTTTTAAA AAATTTTTT  
CCTTTTATT CTATTGACCT TTAGCCCTCA CAATGATTCC TACAAGCCCC ATTTCTGTAA ATGGGGATTG AAATAATTGC  
TGGACTTTG AGAGATAGAT ATATTAAAT GCAAAGTGG AGTAGTGGG GCAAGTGATA CATAACTAGG TTTTAAAGTC  
TAGCCTTCTG AGACCACTCA TTCCATTTGT GAAAAGTGAT TCTACTTCT ATTATGAGCC AAAATATGCA TTCATTACC  
CATGCATTGA TTTATTCATT CAATAAATAT TTGTTGGATG TCCACTCTGT ATCAGGAATG TGCTAGGTTG TGGGAATACA

GCAATGAACA AGGTAATTTT TCCCTACCCC TAAGGAACTT AGAGTTTAGT GGGGAAGACA GACATTAAAC AAACAATTGT  
GCAAGTAATA ATCTATAATT ATTTATTACA ATTAAAGGAA GGAAGAGACA TATGGATTAT GAGGGCATT AAGAGGAGAC  
CTAGTGTAAG TAGCCAGTTC TCGTGAAGGG ACATGTATTA GTTGGAGTTC TCCAGAGAAA CAGAACCAAT GGTGTGTGTG  
TGTGTGTGTG CGTGTGTGCG TGTGTGTGTT GGGGTGTGGG GGTGTGGTAT TTTTATAGA AATTGTCTCA CACAATTATG  
GAAGCTGAGA AGTCCCATGG CCTGCTGTCT ACGAGCTGAG AACCAGGAAA GCCAGTGGA TACTTCAAG TCCAAAGGGC  
CTGGAACCAA GAGTGCCAGT GTTGAAGGA AGGAGAAGT GGGTGTCCCA GCTTAAAAAG ACAGTGAAAT CACTTTTTT  
GCTCTACATA GGGCCTCAAT GGGTGTGATC ATGGCCACCC ACATTGGTGA AGGCAATCCT CTTAGTCTAC CAATTAATA  
CTAATCTCTT TGGAAATACT CTCACAGACA CACTGAGAAA TAATGTTTTA TCAGGGTGAT AGAAATCTTC TGGAGTTAAA  
CAATGGTGAT AGCTGTACAA TCACATACAT TTTTAAAGGG TCGTTTTTAT GGAAAGTGAG TTTTATCTAA ATAAATTTT  
TAAGAAAGAG ACTTAACACA GAGATAAACA TAAGCACATT TATTGTCAAC CTTTATAGTG TTATGTCAAA TAGGTCTGAC  
ATAAGCTTAA ATAAATATAT ACTTTAAAAA TTATAAAAA TTTTAAGTTA TAATTTAAAA TTCTCAATAA AACTCAAACA  
CAAAACCAAC TGGTATTCA CACAGCTAAT TTCTAATGCA GTTTACATA ATATTTACAA CACTTAAACA ATTTCAAAGA  
AAATAACACT GTATTCCATA CATAGCTGTA TCAGTAGT GTTCTCTCT TATTCCCAG AGTTTTCTG CCCCITTTAA  
AGAACCTCTG CTGTTCTGAT CCTATCACA TCTCTGTTT GACTGTGGC TTTGTTGTTG CCAGTGTTC GCCAGAATT  
CTCTGAAACT TTTTTTCAA CACATGCTAA GTTAATGGAA GTGTAGGAGA GTTTGATTTC TCACACTCCT CAAGGCTAGA  
GCAGCTTTGG CAATTACTGA CTGAGAATTT TCAATTGCCA GTGATCAACT GAAAAGTGGG GATTCCCTTG GAATTGTTAA  
ATCTGCTTAT AAATAAACAT AAATGCTTGC TCACACAGGC ATCTCTCTCT TCCAGAGCAC CTTAACATAC AGAAGAAAA  
AAATAGGGA AAATATTAG ACATCTCAT TCGTTAAAAA TCTACCAGAT GACTCTTTA CATGGTGAGT TTCTATTGTG  
AATTTAAAA CTTCATAAT ATACAAGAAT TATGTTTACA TATCATATCT GACAAACATC TTTGTAGGAA TGCAAAAGCAC  
ATCCATCTTT CTGTATTCTT TTCCAACAAA GACATTCATA AAATTATACC TTTGTGTGTT TGCATTTATG CTTTATTAG  
TTCAAAACGT TTGGCCTCAT GGAAGTTTT CATCGTGGAA ACCACATATT TCTGAAAAA TATCTGACAA TATACAAACC  
TTCAATTCAG TTTTACTCT CCAATTCTAC CATGTTTTCA AAAAACAACT GTAGTAAAAA CACTCAGAAC TTTATTCTGG  
TTAACATCAT GCCTTGCTAG GGGACAATAG TTCCCTTTT TGAATAAAAT TAAAAACAGA TGTAACATAA TTTGTTAATA  
AACATGAGG GGTAAATCTA GAATAAGTAA CTTTACCATT ATCATAGTTG ACAGCATTTA CAAGTTTTT AAGTCCCTAC  
CACACTTGTA TTGAATGAAG AAGTATGGAA GATTATAATA TATTCATATG AAGTAAAAAT ATCAACATCC TTAAGAATC  
TTAAGAAGC ACTGAATCCC ATAGGGATGA AAGTGATTAA ATTGTGCATA GTAACCTCG CACAGAGCAT TCAGTAGGAT  
TTGCACCAT AACAAACCTC CATGCATTTG CCGTGGGCA TTCAACATCT GTCATTTTT TAAGTTATAA TATTTTTAGT  
CATTTTTTC CTCTAAACTC TGGATAATTA TTATTCATTC TTATGACAGC AACTGTGTAA TCAGTGTGCG AACACTGTG  
AAGGGCAAAA GAAAGAAAGC CACAAAATAT TGTGTTCTG TGCCAAGATT TTACAGCGAG CAAGGGAGAG TTAGAAAAGG  
AATTCTGAGA TTTAGAGTC TTGGTCTCT CACCTTTGCT TGGAAGAAAA TATCCTTTCC CTTCATTAG CAACACTTTC  
TTGATCTGTA GAGTAGGAAA GGGAACTAG AGTCTTTTCA GTTGAAGGCC GTCCTTGCT GCTGGACTTT GATCTATTGA  
AGTGGTGATG GGTGTGCGG TTTCAGCCAT AAAGGCATCT GGCATAGTAG GCAAGAAGGG CCAGAGACCC GAGGAGATT  
ATCTGTCTCT GTTAACTTCA GTGTATCCCT CTAGTTCCTC AGATGCACCT GTTCTGTAA ATATAAACAT GCATGTCATC  
AGAACACTTA ATATTCTGCA TACTGATCAT GACAAACAAA TGTACCTCT AACACAGACA CTCTACTAG GATAGACCAT  
GTAGGAACAT CGAATTCTAT TCAGTTAGGA CAGTGATGAT GTCTACATAT TATACCTCTG TCAAAACCTA CAGAATATAC  
AACACAGCAC AGAGTGAATT CTAATGTAGC CTGTGGACAT TAATGAATAA TAATGTATCA ATATTGGCCC ATCAGTTGTA  
ACACTAATAT AAGATGTTAA TAACAGGGGG AATTGAAGGG GTGGTGGGGA GATATGTGG AACTCTTGT GCTTCTGCT  
CAATTTTTCT GTAAACTTAA AACCACACAC AAAAAAAG TTTTAAAT TTTTAAAAA GTATTAGAG GGACTTGACC  
TTTCAAAT CTCTCAAAGC AGGTCCGAGT AGTTAAGAAC ACAAATTTTA GAACCAAGCT GCCAGAGTTT GAATCCTGGC  
TACCACTT ACTAGCTTG AGATTTTACA CAATTTACTT AACTTCTCTG TCTCATTTTC TTATCTGTG TGATAAGAAA  
TAAAGTAACA GGCCAGGCC AGTGGCTCAC GCCTGTAATC CCAGCACTTT GAGAGGCCAA GGCGGGTGA TCAGGAGTTC  
AAGATCAGC TGGCCAACAT GACGAAAAA TACAAAATCT CTACTAAAAA TACAAAAAT AGCTGGGTGT GGTGGCAGGC  
ACCTGTAATC CCAGCTACT AGGAGGCTGA GGCAGGAGAA TTGCTTGAAC GCAGGAGGT GAGGTGTCAG TGAGCCAAGA  
TCATGCCACT GCACTCCAGT CTAGGCAACA GAATGAGACT CCATCTCAA ATTAAAAAA AAAAAAGTAA AAAGAAAGA  
TAAGAAATAT AGTACCAGC CCTATCTCAG AGTTCCTAGC TTAGAAAAA TCCAGAATA TAATAAGTGC AATGTAAGGG  
TCAGCTATCT TCATTATTAT TATCTATCAT AAATGAAAT ACACAATAA GCTAGATCCG TTTCTTCTC CTCCTTCTAC  
AAAAATAAA GCAACTTTCC AGAACAATAC CCAGGTGATG ATTTCTCCC TGCTCCCTCC CTAAGATATT GGCAAGTTG  
GAGGTTCAA GGAGAAACAG AGCATGTAGA GAAGATACCT CTCTATAAC CATTGTGAT TTACAAGTCT TACCTGATTC  
TTTTGAACCT AAAGGATGTA AGAAGCTTT TGGTAGCTTC CATCTGATTC AAGGCTTTG CAGTGTGCT GGAATACATG  
AGAACACTAG GTAAAGCACT GTCTTCCAAC ATGAAGAGAG AAAAAATGT GGAATGTTCA ATGGCATGCT TTGTATAAGA  
ATGCAACTTA CTGGCAGGA ACAAATTTCT TTGCTGCAA AGAAAAGACA AACAACCATT AATTCAGACT AATGACTTT  
TAAGGATATA TTAATCCAG ATACAATATG ACTTAATTCA TCAAGTGTG CAAACTCGAT GTTCAGGGC CTCTGTAATA  
ATCAGAGCAC AAGCATGGCT CTGTGGCCTC TAGGGTAAAA TGCAAGTGC ACAGCCATCC AAAGGGCATA GCAGCTTCT  
AATGCCAGCA AATAGCTACG GGGTCATCT GCCCAATTCA GCTCCCAAT TTTATGAGA AGTCCAAAGT CTAAATTTAA  
ATGTGAGATT TCTATTG TAAACGTGAG AACTTAATC AAAAAATGTT TAAGTACTCT TAAACATGTA AGCCAAACAA  
ACCATGAGTG TAGTCAGATG TGCTTCCATA TTCTTATGA GAGACTCTCA AATTTAGGCC TGTACTCCAA ATAAATCTCC  
TTAGGAAGAA TTTTATCCAT TTCTCTAGA GTGCTCATCA TGGCAGTTCC ATTGCACAAT TCCGGGAGGC ATCATATAAT  
TCAACATGAA TAGCACCCC TGGAGTTGTA CAATATTAGG CAGGACTAAC ATTTTATTT CTTGAAACAC TTCCACACT  
GAGTTGACT ACTAATCTT TTCTTAAATC TTCTGCTTAA TTATCTGCA TTTTATCCAG ATTCTAATTA TTGTTTAAAT  
CAGTAAGCAA GACCATGACT TATCAATGAG AAAGAAATGT ATTTTCAAAA ACATTTTGA AGTACATTCA TAAACTTCT  
CACCTTTCCG TAAGCATTTT CGAAGCCAGA GGAGAAATGG TGCTAATGTC AGGAGGGAGA GTCCAGCAGC AGAAAGTCCA  
GCTACCAAGG GAATGTTGGA CTCAGTGGA GATAAGGAG TAAGAGACA AGAAAGGTCA TGAGGAAGAA TTGATGTTAA  
AGTCTCTCCG TCTGTCCCT TTGGCCTTT TTCTGTACAT TCATTACTAG GAGCAGAAGA GCTATCTAGT TTAATACAAG  
AAGCAGAGAT GTGGCATTAC AGGCCTTTGA GATCTGCTCC AAGCCACCTT TGAAGCTATT TCCACCATTG GCAGGCAGAA  
CTCTAATTTG CCAAGCTCGT TCACAATACC ACACCACACC TTGGTTAATA AACACTGCAC TTGCTGTCTC TCTGTCTC  
ACTCCCTCT GTTTTCCATT TCCCTTTCT CTCTCTCTC CTCTGCTCC TTTTCCAGT TGTGAGAATT CTACCCTTC  
CATCAACATG CAACTTCTGT TTTTCTCTA TCCCATACA ACTTAATATT CAACTTGT CAACCTGGGC GAACCTTCTG  
GTTTGGATAT AATGAATAGT TGATTACTGT AACAAGATAG CTCCCTTT TTCTTTTAA TCACCAGACA ACCACCATCA  
ATCAATGCAT CACCTTACA GGTAGTAGC AGGCCAGACC AGTGTCTGT GCTCCACAT GTCCGAGCTG CAGAGCCATT

GAGCGTCCAT CCTTCAGGAC AGGCGAACTT GCACACAGTG CCAAACACGG GCTCCCCACT GCAGCTCATG TTGATCTTTC  
CCGGAACCTGC CAGGCTTGAA CATTTTACCA CTGCAATGT TAGGTACACA GGCAGAGTTT CAGAAAAATC TACTGGAAAA  
CTTCCAAAAC TTGCTTAAAA GTCAACAATG AATGTAAAGT GTAAGCGCTA CTTAGTTTTC AGCATGTAGG AAATTAGGAC  
CAAACCCCTT TGGGGCAATC TAGGTTGAGA AACTTTATGA AGTATTTGAC CTGTACCCTA AAAAAGTCTG CACTCAATTC  
TACCTTGGCA GGAAGGAACC TCTTCTGTCC ATTGTCCCTG AGATGTGCAC TCAAGTTGAG TTGATCCATG TAATTCAAAT  
CCCTCCTCAC AGCTGAAGGC ACAAGAGGAC TTGTAGGTGA ATTCTCCAAT AGGGGAATGA GCACACCTCA CCAAACCCCTT  
CGGGGGCTGG TGGACAGCAT CGCATCTCAC AGCTGGAACA CACGAGAGAG CACTTTAGAA GTTTGTTTGC ATCTCCAGCA  
ATACGTTTCC CAAGGTAAACC AAGTTCCCAA GCTCTCAAT AGTTCTTTT ATCTTAAAAA AAAATAAAAA CAAAGACTGT  
ACCTTCACAT GTGGGCTTCT CGTTGTCCCA CTCCCTGTG GGGCCACATT GGAGCCTTTT GGATCCCTTC AACACAAAAC  
CCTGCTCACA GGAGAACTCA CAGCTGGACC CATAACGGAA ACTGCCAGAA GCACTAGGAA GACAATTCAT GTAGCCTCGC  
TCGGGGTTGG ACAAGGCTGT GCACTGGAAA GCTGAGACAT CAAAATGATG GTCAGAAAAAT ATTGCAGTGG AACTAGAGAG  
TACTTGGCGT TTGTTGAGTG AACCCAGTTC ATTCAAGCAA CACTTGGAGA ACTGAAGATT CTTTATAATT CCCTGGACAA  
ATGGGAAGAT GGCTGTGTTT TCTTTGAATT TCAGCCCCCT CACTGATCAT GGCATAATT AAAAGACTAA TTAATCAGAA  
CATTAGTTCC TGAGCACTGT TCTTCAACA CACAAAAATA ATTATGGTCC AAGGAAAGAT TTCACGCACT CTGAGGACAA  
CATATGGGTC ATGGATGTTT ATAGATGGTG CCAAAAAGAA AGAAAAAGAA GCACCCCTAT AAAATTTGTC TGTTTGCGAG  
TTTGGTTTTT GTGTTATGTT TTGCTACTGG AAATCATTCT GTGCTGGCTT TGGCTAGGAC AAGGCCAGTG CCTGATAGTA  
AAAAGTCTT GTTTTCAATA TCCTTGCTCT CACTTTAAAG TGAATTAATA TTTACTGCTT ATATATGCAT CAATACTATC  
TCTGTAGCTG ACACCATGCT TGAACACAGT TCATCACTGC TAATTATGAG CCATTTTACA AGACAGGTGT GATGAGAGTT  
TTACATTCAA ATCATGTTCT CATTATTCTG CTTTCCGAAT TTTCTAATAT GATTCCTTTA GATTAAGAAT TCTGTCTATT  
CCATGTTAAT GTCTACAAAG TTTTATCAGC ACATGCAGT TAAAAAAGAA CAGCAAGAAA TTCATTCTTA ACACATATGA  
TCCTTTCCCT GGCCAAACAT TAGTTCTTTT AAATGAATCT CAAAGATACG AGGGTTGCTC ATCAAACTCTG ATTCTATAG  
TTAAAGTGGG TATTGGTTTT TTTTTCCTT GTCCAAGTTT GAAGATGGTT GTTCTTTAAG AAAGTATAAA TCGAAGGATC  
TCAAGCTTAC CTTACAAAAC TGGGATTTGC TGTGTCCACT GCCCTTGAGT GGTGCATTCA ACCTGGGCTG GTCCTGCAA  
CATGAAGCCT TCCTCACAGG TGAAGTTGCA GGATGATTTG AAGGTGAACCT CTCCAGCAGG GGAATGGCTG CACCTCACAG  
AGCCATTCTG AGGCTGGCGG ACGGCCCTGC ATGTCACAGC TGTAACAAAT ATACGCATTG ATATTAGCAC GGCCTAGAAT  
TAGCTTCCCT ATTTCCAGTA TGGGTTGAGA GAAAGAATGT TCACAGTAAG TCTCCATGTG GAACAACCTC ATCTTACAC  
GTTGGCTTCT CGTTGTCCCA ATTCCAGAT GAGGTACTCT GAAGGCTCTG GGCTCCCAT ATTCAAAATC CTTCTTACA  
GTCAAATGTA CAGGTTGTGT TCCATGGGAA GCTTCCAGGG TTTTGGAAAC ATTCCACGAA CCCATTGGCT GGATTGTCA  
CAGCATCACA CTCAACCACT GAGGATTTA AAGAGCACCA TGAATTTTAC AGAAGAATGA TCTTTTCACT TCCTATTGAG  
CTGGGTGCTT AACAGAGTGA GGAAGCTGCC TTCAAAGGGT AGATCCCAAA GTCCTATGTC AATTCTTAGG GACATGCACA  
GCCAGAATAA AAGCTTTTAT TCTTTTTCAT GGATATTCTA TCTTTTCTGA TTTCCACTTT GCCTATGCTG AGTGGTCTCT  
AATCATGTT ATCATTTACG TGAGGTAAAA ATTTAAAAA AATAGATTCC AGATTAGGAG TTATGACTAT TACTGCATA  
CTAGGCTAT TCATTATT TTAGCCATCA GAGCCTGAAG AACTGATTTT TCTTTTTTGG CCCTCTGGT TACGAAGATA  
AAATTAAGAG AGAAAAAGAG ATACTAAGAC TGCTTGACTA TCATGGTCTT AAGTTAGTCC CATGGCTTGG AAAAGTTAAA  
CAGGGAAACA AGATGAGAAA TCCATTGAGA TTTCTAGAGC TTTATTGTTT TATGGTCTCC CTTACAAATC ACCAGAGCCT  
CAGAAACACC CATTCAAGC ATAGAATAAA AAAACCTCTC TCAACCCAAG CAGGTACTGG GTTGGCAATA TACATTGGCT  
GAGAGAACAA ATTGTATTA AAACAAAAAC AAAAAAAGAA CTTTCCCTGA AGTTTGAAG ATGTAAGTTG AATCAAAAA  
CAGAAGCAAT GAGGGATGAG TTACAGAAGC TTCTGTGCTAT TCTCAGAGGG ATTTACCATT GCAGGCTGGA ATAGGAGCAC  
TCCATTCTCC AGAGGACATA CACTGCATGG TCTCATGCT GCTTGGCAGG TAACCCCTAT CACAGCTAGT AGAGCAGGAA  
GAATTGTAGC TGAAGTTTCC CAGTGGGTGA CTGCAACCA GGCTTCCATG CTCAGGGGAT TCCAGGGCTG TACAGTTCAC  
AACTGAAAAA GAAACCCAAA TCAGTTCTGC TCATCTCTCA CTTTAAACAG ATAAGAACAC TGGAACTAG AACTACAGTT  
TGGTTTTTTT TTTTTTATG TTAATAATTT ATAAATTTT TAATGGAATT TGTAATAATT ACTGTAATTC TACCCCTTTT  
CTTTTATCA AGAAAAATGCT GATCCATAAC AACAACAACA AAAAAGCAGT GATGACAACC ATAAAAAGA AATATTGAGT  
GATATGGGGA GAGTAGTGA ATTGTGTTA CCTCAAACT GTTCAAAATTA TATGAACAA CACAGCAAA TTAGGTACCA  
CAACAAATTT CTTGTACTT TTCTACAAC TGCTAAAAAT ACTACAGTAA GCTTCCAAC AGGATGAGAA CCATTACAA  
AGCTATATT CAAATTTAAG TACTAGAATA CATTACAAAT TTTAAACCC TAATGCTGCA CTGTCTACTA TAGTAGCCAC  
TATCTGTGTG GCTACTCAA TTTAACTTG AATTCGTGA AATCAATAA CATTAAAAAT TCAGTTCCTC AGTGTACCA  
GCCACATTT AAGTACTCAA TAACCACATG TGGCTCATAG GTACACACTG GAAAACACAG CTATGGAACA TTTCCATTAT  
CACAAAAGCT CACTGCACA ACGCTGTGCT AAGGAATCTT GGAGAGAAGC TCATCTAACT CTCTAATGT ACAAATTTAG  
GAACTGAGAC CTCATTTCAT TCAAGTGACT TGCTCCATGC TACACGGCTA GTCATTACAG AGCCAGAGGC CAGAGCATGA  
ACCAAGATAC CCTGGACTCT GTAACCTCAT CATTCTACT GCAACGTCTT GTTACCACCT AGATGAGGTG AGTACATGTT  
CCTCGCAGG ACACAGAATT ACAGTTTATT GAATGTGTCC TGTGTGCCAG GCACCATGTA ACCATGAGCC TATGAAGTTC  
ACACTATTAT TATCCTCATT TTACAATGAG AAAACTGACA TAGAGAGTTA AACTATCTTG TCAAGGTGCC AAAATAAATA  
ACTGGTGAAT CTAGGACTCA AACCAGCAG GGTCTGACT CATAGTCTCA GCTCAGATC ACCATATGAC ACCATCTGCA  
CCAGGGAAGG GAAGGCATGC AGACCTGACT CTAATGCCAG CTAGGACGTG AGATGGTGCT ACCATCTCAA GTGAAGAAAG  
AGGCAAGAAC CAGACTTACT TTGCTCACAC TTGAGTCCAC TGAAGCCAGG GTCACACTTG CAAGTGTAAT TATTGATGGT  
CTCTACACAT TCACCGTGGC CACTGCAGGA TGTATTGTTA CAGGCAGCTA CGGAAAAATC AAAGCATGAT GAGGAGGACT  
ATTACTGTGC TTATAGTGA TGCTTTGAT TTTAGAATCA ACAGTGTGCA ACAGAGACAT CAGAGCTCTC ACAGAGTGGC  
ATAGACTTTA ACTGAAGTGT TTTACAAAGT TCCAAATCTG AGTTTCAGGC CCACCTATCC TAAACCTTGA TGCTAATGTA  
TAGCTGTGGC TGGCACCTAC CGTAGAAAAT TACTTCTTC ACAAACCTG AAGACAGTTC CCTACCACA AATAACAAG  
TAATTAATAAT ATGTATTGTG TGTGTGCATT TTTATATGTA AAGAACTACA TATTGCTTA CAGTATTTAT ATATATTTA  
TATATATACA TACACACATA TATGTGTGTA TATGTGTGTA TGTATATATA TAAATGTAT ATAAATGCTG TAGGCTATAT  
ATATATACAC ACACACATAT ATGTGTGTGT GTATATATGT GTGTGTGTGT ATATATATAC ATATCCACAT ATTCTTGCCC  
ACATTGCAC AAAACAGCAA AAGAGAGAAA CTTTAGCAGT TAAACAGAAAT CTTTGGAAAC ATAAATGAC CACAATAGAG  
AGCAGTTTTT GCATGCTGTA AATTGGCCAA GTTGCCACA CACTGAAACT ACCTCCCACT GCTGCCGCAA ACTCCCTACC  
TGTGTAGCAT AGGGCAAGCT TCTTCTGCT GCACCTCTCA TCATTCCACA TGCCACATC TTTTCTCTC TTGATGTAGA  
TCTCCACGCA GTCCTCATCT TTTGCTCTAT TGTGGGTTT ACCTGGAGCC CAGTTCTTGG CTTCTTCTGT CAGAGGTTTC  
TGGGTTCTTA CCCAGACCA CACATTGTTG ACTTTTCTGA TTCCAATCCA GTAATAACTT GGTGAATAGC TCAATATGGA  
GTTTAGGTAC TCAATCTCTT CTTTGTTTTG AATTGCAACC AGGTGTGTGT ACCTTGCTG ACAATAAGCA CTGGCCTCAT



CATAAGTCAT AGCTTCCGTG GAGGTGTTGT AAGACCAGGC TCCACTCTCT TTAATGAGAA GCACTAGTGG GAGAAAAAGA  
AAAGAAATGG TAGAGTTTGG TACTGTTGTG GTTTAACTCT GACAACGTG CTTTTATTG TCTTATTTTT GGCAATGTTT  
GTGACATGGC CCAGACTTTT CTCATCTTTT CAAAAGTAAG AAGTACGTAT GAAGAAACAG CGACTTATTG TTTATCTCTT  
TTGTGACTGC CACCCACTAG GTACCTTATC CACACTCACT CACAACATTA TAGTATACCC ATTTTGTAGT AGAATAATAA  
TCAGAATAAC TAAGCTTTAT TGAGCACTTA GTATGCACCA AGAAGCACTG TATGAGGTAC TTCCATGAA CCATGCTATT  
GAATCCTCAC AATGCATCTG GGAAATAGGT CATTATGATC CACACTTTAC ACTTAAGGAA AGGGAGACAC CAAGAGGTAA  
AGTAAATGAC CCCAAGCCCA GGGAAGAACA CATTGCAGGT AGAGGTCAAG GATGCTGCCA GATATCCTGT GCAGGACAGC  
CCCAGACAAG CAAGGATATT TCAGTCTGAA ATATCTATAG TCGGAGAATG AGAAATCTTG GTCTAATGGC ACTGACTTAC  
CCAAAGTGAG AGCTGAGAGA AACTGTGAAG CAATCATGAC TTCAAGAGTT CTTTTACCC AAAGGTTTTAG GCTTGAATAA  
CTTTCCTGGG GAGATAAAAC ACAAATGAA TTAAAGAAGG AAATCGTGGG TAGCTAGTTA CATTATTCTA CCATGATGTT  
TAAGGCAGCA TCCTAAGATT TTGGGCAAG GACACTAGTG CAATAATCTT TATTTCAGAG TTTAATCAAA TAAATAAACA  
AATTTTAAGA CTTTCATTAT TTAGGTCAAA GAGAAAGAGC AGGTTTTAGC TACAATACAA TAAGAGCTTG TACAGATGTG  
GTTTTTATTA GAAGCCCTTT TGCATATCTG TGTTTCATGG CCGAGGGCTG CCCTTATAAA GCGTTCTGCA CTTACCGTTT  
TGGGAAGCAG TTGTTCAAC ACAGGATCTC TCAGGTGGGT ATCACTGCTG CCTCTGTCTC AGGTCAGTAT AGGAGTTTTG  
ATGTGAAGTC AGCCAAGAAC AGCTGAACAC TACTTCGGCT GAGGCCCTTT TATAGGAGGG ATTGCTTCCT GTGAATAATA  
GGAGGATATT GTCCACATCC AGTAAAGAGG AAATCCCCAA TGGCATCCAA AAACCTTCCC GGGAATATCC ACGATGCTTA  
AAATTACAAT GATGTCAGAA ACTCTGTCTC TTGAAGCTAC TTCACCTTGG TCCATGCCTT TATATCGTAT ATGCAATTTT  
ATTAATATGA CAAAAATGCA TGATTTTTAA TTATAATAAC ATAAAGTCTA TGTCTTTAAA AAGTTGTAAG ACTTTGCTTG  
TTAGTAGTGT CTCTCATGTA GTTGTGGTAG TAATTAGAAT TTCAGAAAAA GAAGGAAACC AAGAATAGGT TTGTCATCCA  
TAGTCTACTA CTTTCAATT CTCTCATGTA GCTGTGGATA ACCAATCACT ACTCATTTTT TCTTCTTTT TCACCTGCCA  
ATTCAACATA TTAAACATGC ACTGTCTCAC AGAGGAATGA CTCACAAGGT AGATATTAAT CTTCAAGTTT TGACGGCAG  
TTATGCCTAA ATTAATAATAT TATCTAAAAA TAATATCTAA CACTCAATG GTTAAAAATA TGCCTTATTT TAAAAAAAGA  
AAAAATGGAA ATAGATATTT ACATCTGGGA AAGTTTCATG GTTTGTTTCA TGAAAAAAT AAAAAGGAGG CCAGGCACAG  
TGGCTCACGC CTGTAATCCC ACCACTTTGG GAGGCCGAGG CAGGCGGATC ACCTGAGGCC GGGAGTTCAA GACCAGCCTG  
ACCAACATGG AGAAACGCCA TCTCTACTAA AAATACAAAA TTAGCTGGGC ATGGTGGCGC ATGCCTGTAA TCCAGCTAC  
TCGGGAGGCT GAGGAGGAG AATCGCTTGA ACCCGGGAAG TGGAGGTTGC AGTGAGCCAA GATCAGGCCA GTGCACTCCA  
GCTTGGGAAA CGAGTGAAAC TCTGTCTTAA AAAAAAAGAA AAAAAAAGAA AAAAAAAGAA AAAAAAATAA  
ACGGAAAACT ATATATATAT ATTTAATTGG TCAAAATTTT GTTTAAAAAT TTTGAAATGT TAATGTGCAA AGAATAAAAA  
TTCTTCCACA ATGTTAACAG TGAATACTC TGGATGGCAG GATTTGGGAT AATTTTTATA TCCTTCATTA TTATTTTCAG  
GATTTTAAAG TTTTTCCTT TTTCCCTTTT TTTACCTTT ATAGTAACAA GAATACAGTT TAAAGAACT TGTCTCTAGG  
CCAGGCATGA TGGCTCATGC CTGTAATCCC AGCACTTTGG GAGGCTGAGG TGGGTGGATC ACCTGAGGTC AGGAGTTCCA  
GACCAGCGTG GCGAATATGG TGAACCCCTG TCTCTACTAA AAATACAAAA ATTAGCCGGG GTGTAGTGGC GCATGCCTGT  
AATCCAGCT ACTGGGGAGC CTGATGCAAG AGAATCGTTT GAACCCAGGA GGCAGAGGTT CAGTGAGCT GAAATCAACAT  
CATTGCACTC CAGCCTGGGC GACAGAGCAA GACTCCATCT CAAAAAAGAA GAAAAAAGAA AAAAAAAGAA AAAAAAAT  
TGTTTCCAAA TGCAACAGAA GGAGATGTAT GTGGTATCCT ATATTCCTGC TCTTCATTTT GACATTTCTT CTGGGTGATT  
GTATACATTC CCCATCTCTG CATCTTACCC TATCTAAATG ATGGTAACAG TAAATGGGGA TCATTTTAAAT TTCCATATTC  
TGTAGGTTTT CAGAGCTCAA GTCAAGCTAA TATTCTATAT CTACAGCCTT TCAAAATAGG AGGTCTATCT AAAAAATGTAC  
TGTCAGCAGA CCGTAACGAG TAGTGGTAA AGCCTCGTTT TTCTTTTAC TTGTTAGCAC TGGTCTTTCT GTGTTCTATA  
AGATGTCAAG ACCCAAAAAA AAAACAAGAA AAGAGAAGAA AATTCCAAA AAGACAACAT GATTAGAAAA  
AAATAACTTA ATTAACGAAT TTAATTC AAC CCCTATCAAA AAGCATAGAA TTTATTCCCT CCACCTTACC ACTCTCTTAC  
ATGATCCAGA TACTGACATT ATTCCAATTC TTTATCCAC TTTACTTAGC TCAATGTGGT TGTGCTTCA ATAAATTCAG  
AAGAGTAATC ACTCATATAG TGTTTATTTA GATTTTAGGG CAGAATGTCA AGTTGGGTTA ATACATTATC TGTATGTATT  
TTATTTTTAA TAAAGTATGA ATACATAATC TGCTATTTTT AAAAAGCATG GTCAAATGTA TAGAGTAGCC AAATCTTAAA  
AAACAATTTA TCTTCGATAT CAATAAAGTA CCTAATAATT ATATTGCTAA TAGAAATTAG TCGTTAACAT CCCTAGATAA  
CTAACTTTAT TTTTGCATAT TTTTCATAAC TAAGTTTATA GTTTTCTCT TCCCCTTTT AAAATTAGTT CAAAGATATC  
TAAAAATAGC CCCAGTGGTG ATGAAGTTT TATTTTACTT ACATATATAT GTCCCTGGAC CCCAATTATA ATCTTAAC  
TTATTGAGT GCTTACTATG TGCCAGGCCA TATTCTGAGC ATTTTGTATG TTCACCTATT GATTATTCAA TCCGTACAAC  
AGCCTATGAA ATAGGTACTC CTATTATCCC CATTTTACAG ATGAGGAAAT TGAGAATCTG GGGATTTTAT CTCATTCAAA  
AGCACAGAGC TAAGGGTTGA AACCAGGCAG TTGATATCCA GAGCCCACTC CCTTACCTGC TACTCCAAAC CATGATTTCT  
TTTGTGTTA TGCCCCGAGA TTTCTTGTTC TACCCAAGTT TCCTGTACTC TTCTTGCCCT CTCTTCTCTG AGACATCCTT  
GACCATACA GCTCTCCACT GAGATAACTG TGTCTGGGT TCTGAGACAT GGGGGCTGGA AGGGACCCCA GGGACAGTGA  
GCAGTAGGGA GAGGATGCAG TGAGAACAGA CCTGGATCC CCGGTGCATA GGCAGGGAGA AAGTGGACAA  
AGGAAAAAAC AAGCAAGGCA GGTGGAGCCA TGCCTAGGTA AAGTTGATCC CTAAGCCACA GTTCCAGAA GTTCTGATT  
CAAAAGCAAA TTTTCTCTAA GGTCAAAGGG CAACTGATT ATTCTAAAT CTAACTGAT TATTTCTAAA TTGAGAAAGC  
TTCAGGGAGA GATCCCAATA TTCGAAGGAT AAGAGAAATG AGGAGTGGAA GAGATAGGTG AGTAACAGTA ACTTAAATGT  
AGACTATATA TAATATATAA TATATGTAGA GTATATATAT ATAATTACAA TATATTATAT ATGTGGAATA TATATATTAT  
TTATATATAT TATATATATT TATATATATA TATTTTATA TATTTTATAT ATAAATATAG ATATTTTAT ATTTTATATA  
TAAATATAGA TATTTTATA TATATTATAT ATAAATATAT GTGAAAGAA AATAGAATCT TGAGACCTCA  
AATTCATAT GCCAAAGGGA AAGTTAAGCT TGGGAAATGA GTCATGCAAA AACTGCCTTC CTTTGTCTCC CAAATACCTG  
TAATTTTACA TGCTTACTTT ATCTTATATA AAATGTAGAT GTACTGAGCA TGAGATCCAT GCATAATTTT CCTTAGTCC  
CTTCTTTTAA CATGTAAAGT GTAGACTCAC TGAGTGTAC AGAGCCTTGC CACAATGTAA AACTGTGTCT CATTGCCAAC  
CCATCTTTCT TTTATTTTCT TCCCCTCTG CTGCTCTTT CCCCTCTAAA GATGGAAGTT CCAAAACCTC TCTTTGGAAA  
AAGCGCAGT CACAGATCCT ACAGTGATT GTGTTCTTT TACCTGGGAC AAAATAAACCT TCTAATCTGT TGAGATATGC  
TTAGTTTACT TTTTGGTTTA CAATATGTAC ATGTATGTAT ATAAATTTATA TGTATATAAT ATATGTACTT GTTTTAAACCA  
GAGGTATGTT ATTCAAAATC CATTATCTCT TACAATTACC TGCATTCTCC CACAGTATTT TCTGTGTCCC TGCCCCCGAG  
GTTGTCACTG CAAATCAGGT ACATGGATAC TGGGAGCTGA TGGGCTCCCC TCTGGCTACC TGGGCTGCTG AAGGGGCCAT  
AGACAGACCC AGCTTCTCTC TCGTGGAGAG GCCCTGGGCC AGCGCTGCGT GGGAGTGGGA TTACAACCAG ACTATAGCTT  
CTTCACTGCT TTTTCTCTAT CAGGATTTCA TAAGAGGCAA TTGCTTGTTT TTTGAGGGTG GGGGCAAAATC AGGGGGAGTT  
GAAGAGGAAA TTGGGTAAGA TTTGAATAGT TGGGCATGTT GAATATTATG AATATCATCT CCTCTTCAA ATAATCCAAA



ATATACCCCC AAGAAACAGG CTGATTAGAG GTGCTTCAAG GCTCCACTGA ATCTCCCAAG CTCTGAAGAT GTAGCTAGCT  
GTTACCGGAT TGCCGGTTTT CAAGCCTCGC CTCACATGGA CCTCTTGGC AGTTTCTCGC ATGGGGGAAG CATCCGCTAC  
ATAGATGGGA ATGAAAAGAG GAAAGAAGAC GGTGCAAACT CAGGCACACC CCGGTGTCTG CCACCACTGC TATTTAATCT  
CTGAGGTGTC ACCCTTCTG GCTTTATTGT CTCTTCTGG AAGTCTCTG TCCTCTCTC CACACCCTTT AATCAGGCAT  
CAAAGACTTT AACCAGTTTT GCTGTGTGCC CAGGCCACT CATTCTCACT TTTATGGCAA AGGGAGTGGG AGACAGAGAG  
ATAGCCAGAA AGAAGAGATT GGGGACCCCA AGACAAATGT TAGAATTTTA ACCAAGGCCA CCTGTGGAC AGGAGATTAT  
TGGGTTTAGT GGAAGCAGC ACTGGCCACA ACCACACGTG GCAAAAGCAT CTATCGAGGA GTGAAGTTAT ATTTGGTGAA  
TGTGACCGGG AAGCAGGGG AGTGGTGTCC TCCTGCTTC CTGAGGCCT CTGTTCCCTT ACCTCTGCGA AGGCTTATTT  
TACCCCTGAG TGCTTAGTTT TGAAAGCCTT AGTTCCCTCT CTCCCATAAA AAAGCTCTAC TCTGCTAACA TCTAAGTTAC  
CTTTGCAGAG TCTTAGGTAG AGGGAGGAAA TCCCAATAAA GATTCCACCC TATCTGCAAA ATACAAACAT GGTATTTCTT  
GCATTTCCAA AATTGTGAAA GAAAATGTGT ATCACCACAG TAGAGAATGG CATTITTTGT TTGATCAAAA CCTAAATATA  
TTTGATGAAA ATGTGTCTGG TTCTAAGTTT ATTTCCCAAG AAGCCATGTT TACTCACTTG GAATTTATAG ACATCTTATA  
ATATCTGAGT CGAGTAGGAG CTCCGGGCTC TACCTCACTC TTTTCTCCA CACCCAGGGG GAAGTGTAGG GTTCTCAGAC  
TTTGAATAA AGAGGAATCA CCTGGACAAC TCACCTAAAA TGCACATCTT CAGGTCTCAT ACTCAGAGGC TTTGACTCAA  
CAGGCTGTTG TGGCGCCCAA GAATTTGGGC TTTAAATGAG TATCTCAGAT GATTCTAATA CAGAATGTGT AAGATGACCA  
GATCCTATCA CACTTAGATG TATTGGCTA GGGCCACCTA ACTTGGAGAA AATGTAGTA AGACCCCGTG GTTGGTGCTC  
AGCTATAGT ACCAGAATT TGATCAAAAT TACTATCAT TGTGACACT CTCTCGGAA CTGGAAGGCC AGAACCCAC  
TTGTAAGTG CTGGGAAAT ACAAGGAAAA TTAGGGTGA GTAGCATTTT GAATCTTAC ACATGGAAG TAAATGTATA  
AGAATTCTTA CCAATAAAAA AAAAGCAAGA GAGAATAGCT GCTAAAGAAT TAACACAAAT ATGTATATAG TAGTTATTCT  
CTTTCTCTCT CTGATCCAG AGGACTTTGT AATTCCATA ATTCTTCTG AGCTTCCAGG ATGATCTGAG ACTTGAATTT  
TTATGTTGCT TTTTGCTTCC TATTGGCAG CATCTTACT TGAAGTTTCC GCTTCTGCT TGGGACCTA AAAACTAACT  
AATGGGAATT TCTTCAAAAT GAGCAAACTC TGGTGAATTC CCAAAGCGGA AGAAACAAGT GAGGATCGGG CTGGTTAATT  
AAGAGAACTT TTCCTGAATG TAGCCAGACT GTTGGCCGAC GTTGTGTAAC ATGAGGGAAG AAATACCCCT GGATTTTGA  
AGAGCCCTT GTTGTGTTT CTTGGCCATT TGTGTGCTT GTTTGTAAAG TCAGAAATTT CCTGAAGGAC TATTATTAGC  
TTGTCTTCA CGTCAGAAAA CTCTGCTCT GGGCACTTTT AAACATATAA CTGGGATTTT ACTGTATTAG AAAATGTAAC  
AATTACAGAC AGCACTAAAA GGACACCAAA GGGCAAAGAA AATGGGTAAC TTTTTTTCT TCCCAAACT TAAATAGGT  
GATTTTGGAG AAGTAGGAGA AAAACCTGGA TTTTCTAGAT CTCTTTAGAG CTCAACAAGT GATATAGTTA ATTAGTTAAG  
TCTTTGATAT TTGGAATGA TTGGATTAA CCGGATAACA TGAATATTTA AATACAGTGA TTTGGCCAGG AGCAGTGGCT  
CATGCCTGTA ATCCAGCAT TTGGGGAGGC TGAGGCGGGT GGATCACCTA AGGCCGGGAG TTCCAGACCA GCCTGGCCAA  
CATGTTGAAA CCCCATCTCT ACTAAAAATA CAAAATTAGC CAGGCGTGGT GGTGCAAGAC TGAATCCCA GCAACTCGGG  
AGGCTGAGGC AGGAGAATTG CTGGAACCCG GGAGGCAGAG GTTGCACTGA GCCAAGATCA CGCCATTGCA CTCCAGCCTG  
GGCAACAAGA GCGAAATTC ATCTCAATAA ATAAATAAAT AAATACAGTG ATTTAACACA AGAGATTCTT ATTTACACT  
AATGAGCTCT GTCAGTGGG CAAGCTTCTT TGCCTCATA AGTCTCAGAT TTCCCGAGAG CTATTATTAT TATACAAGA  
GTGCTTTACT ACCGTCTCTG CTAGCTGTGA CATAATATGA CAAAAGGTAT AAATATGGGA AAAGGCACTA ATTTATATCA  
AAGCGTCTT CGTTTTTCTT TGCTGTGAAG TTTTAGCTA ATAATTCATA AGAATATACC ATATTTAGAG TGTTTACTAT  
GCATGGGCTT GGCATTCAC ATACATTGCT TCTTACAAAT TTTACAAAGT GAAAGGTAGA TATTAATCTC ATTTTATGGA  
GGACAAGATA GAGATCTGGA GAGGTTACAT AACTTGCCAG TGTTTTTTCA GTTAATAAAT GGTAGGGTGG AGATTCAATC  
TGTGTTACTC TAAAGTCCGT GTCCTTTTTA TTGGCTCCAT GCCTACTCAG ATTTAAATCT CAGCAGGGAA GTAAACCTTA  
GTTTTTACAT GAGAAAATGT TACAGCAGCC TTCTGGCTT CTTTACCC CATCCAGTT TCACGAGCTT AGTGCTTAG  
ATCCGGTCTT TTTAGAAAGCA GACCTCGAAA TAAGGATGTG GGTGCCAGTC ATTTATTGAA AAGATGATCC AAGGAAAGCC  
TAGTAGGAGA GTGAGGAAGT GAGATGGGGA AAGGAAGAAA CTCACAAGA AGTGTGTTAA TAAGCAGGTT ACCGTGTGG  
GCAGCCATGG GGCTCAGCTG CACTAACAAA CTCTGTCTAG TACAGAAAAC CTCAGGGTCT CCCCAGGAG GGGCAAGAAG  
TCTGCCTAGG GTATATATCC GCCAACTCAG TCACTGGCTG AGAGCTGATC CTGGGAGGGC ATGGTTAATT CCTCTGACT  
TTCAAGTGGA TTCCTGTGGT CAGAAAAAGC CCTTACAAT GAATTCAGTA TGCTGTATT TAAATCTGAC ATGATCTGAA  
TGCTGTGTT GGACAGGGTG GCGTTTATTA GTTTCTGTCT ATTACTGTA CAGATTACTA CAAACCTGAT GGCTGCAAA  
AACCATGATT TATTATGCTA TAGTTGTGT GGGTCAGAA TACAGGTTAG CTCAACTAGT TTCTCTGCTC TAGGTTTAC  
ATTGCCAATA TCAAGGTGTC ATCCAGTTGG GCTCTCTTG GGAGGCTTGG GGATGAATCC ACTTTCAAGC TCATTGAGT  
TGTGGCAGA ATCCAGTTCC TTGTGGTTGC AGGACCAAGG TCCCTGTTGC CTGCTGGCT GTTGGCCAGG AGTCATTCTT  
AGCTTCTAGA GACTACCTGT ACTCTCTGAC TCGTGTCTCC ACTTCACCTT TCAAACCAGC AGCGGCTAGT CGAGTCCCTC  
TCTTCAAATG TCTCCAATG TGCCTTCACC TCATTCTCC TCTGTGTACC ATGTCTGCCT CTACTGCTTG TAAGGGCTCA  
TGGGATTACA TTGGATTTAT TCAATCCAGG ATAATCTCCA TATTTAAGG CTAGCTGACT AGTGATCTTA ATTCATCTA  
CAAAGTCCCT TCCAATAGTA CTGTATTAGT CATTTTCT GCTACTGATA AAGACATACC CAAGACTGGG CAATTCACAA  
AAGAAAGAGG TTTAATTAGA TTTACAGTTT CACATGGCTG GGAAGGCTC ACAATCATGG CAGAAGTCAA GGAAGAGCAA  
GTCATGTCTT ACATAGATGG CAGCAGGCAA AGAGAGAGAG CTGTGTCAGG GAACTCCTCT TTTTAAACC ATCAGATCTC  
ATAATACTTA TCACTATCA CAAGAACAGC ATGGGAAAGT CTGGCCCCA TGATTCAATT ACTCCACCA GGTCCCTCCC  
ACAACATGCA GGAATTCAAG ATGAGATTTG TGTGGGGACA CAGCCAAACC ATATCAAGTA CCTAGATTCA TGTGTGATTA  
AACAACCAGG GAGCAGAAAT CTTCAGGAGT GGGGGGCATC TTTAGAATTC TGCCCAACAA GGCTGGGGCG GGTGGCTCAC  
ACCTGTAATC CCAGCACTTT GGGAGGCCAA GGTGGGTGGA TCATAGAGTC AAGAGATCGA GACCACCTG CCAATGTTGA  
AACCCTATT TACTAAAAA TACAAAAATT AGCCAGGTTT GGTGGTGGG ACCTGTAGTC CCAGTACTC AGGAGGCTGA  
GGTAGGAGAA TCACTTGAAC CCAGGAAGCG GAGGTTGCAG TGAGCCAAGA TTGCGCGCT GCACTCCAGC CTGGGAGACA  
GAGCAAGACT GTCTAAAAA AAAAGAATTC TGCCCATCAT AGTAGGCTGT CCTACAGAGA CATAACCCAG GAATTAGGTG  
AATGGCTAAC CTAATTAGC ACTGTGATGT GTTTCTGAC TTGGTCTTA TAGTCTCTCT GCTTAGATGT GGAACCTAATC  
CATGAATGCA AGGGTTTGT TAGAGTTTTA AGTGGGAGTT AAATATCCAA AGTACAGGAG ATATTATGGG TGCCTCATCC  
ATGTCCTCTT GGCATTTATC TTTCTTGGAT AACCACACTC TATTAGTTTT TATATCTCAG TTGTCTCTAT ACTCTGTGAA  
CTGATGTCCC ATAAATAGAC ATTTCAATTT GCCAGTCTT TGAACAATA ATTACGATTA TTAATCTAGC AGTTATCAT  
AATTGGCCAC TTAACATTAG ACACAGCACT TAGGACTTAA GAATACCATG TCATTGTATC ATCATAATAT GGTGAGGAAT  
TAAGTATTGC TATCCAAAT TTACAAAGAA GGCAGTGGG GTTAGAGTTT AAATAACTTG CTTAAGATGT CATAGCCTGT  
AAGTGACAAA ACTAGGACTC AAATACAGGT CCATCTGACT CCAAAGTCTA TGTCTTGGC TACCACACTG CCTCTCTAC  
AAGTGACCTG TGGTTTTACT ACTATATCA CACTCTACTA ACTTTACCAT CTCCATGAG TCTGTCTAGA GGAGGGCACA

CACAGCACAG AAAACACATG AATGCAAAAT AAGGAAGGGC CTACTTACTA CACAGAGCCA TTCTAATACC TGATGTTTGC  
TCTAATCCAG TTTTACTATT AATTAGTTGC TGGTGCCCAA GTTTTACTG AGAAATGGGG ATAATTTTGG AAGTCATAAT  
GATGCCTTCT TCTCATAGGG TATTTTATTT GTTGTGTAT CTCCAGGCC CAACACAGCC TGGCTTTAG TAAATGATCA  
AAAATACCTG TTGAATGAAT AAATGGAGTC ACCTGAAACA TGTTAAACAT TTGTTTCATGT GTCCTAATCG TGGATTTTCAG  
GATAGTAAGC ATCCTAAAAG GAAAGCATGC ACACGTGTTCT TGCTACATTA ATTTCTCACA ATATAAAAAA AGAAAAGCAT  
CTGAAAAAAG CTGCCAGCCG CTGTGTCTCC TAATATCAAA CTGAGCACAG ATATGGAGAA GCTAAGGGAG AGGGATGATG  
GGCCATGCCT CTAACCTCAT CATGGCAAAA GTCCTGGGGG TCAGACCCGA GGAGAGCAGG AAGTGTCTTT TGAGGGATAC  
ATTTCCACAG TGGAAATAAT GAGACTTAAA TAAATATTAT ATACACAGTT CAACTGTTTT TATGTGTAAG GGTAAGAGGT  
TTTCACAGTA AGGAAGCACT TCTTTTTTTT TTTGTTGAG ACAGAGTCTC GCTCTGTCTC CCAGCCTGGA GTACAGTGGT  
GCTATCTCGG CTCACCTGCA TCTCTGCCTC CTGGATTCAA GTGATTCTCC TGCCTCAGCC TCCCGAGTAG CTGGGACAAC  
AGGTGTGTGC CATTACACCT GGCTAATTTT TGTATTTTGA GCAGAGATGC GGTTCACCA TGTGAGCCAG GCTGATCTCG  
AACTCTGAC CTCAGGTGTT CTGCCCCGCT CTGCCTCCCA ATGTGCTGGG ATTACAGGCA TGAGCCACTG CACTACCAA  
GCATCTCTAC TGATAGCATT TACAAACCTT TCTTAGAATA TTTAAAAATT CTAAGAGAAG AGTAAATTGA GCCTTCCCAA  
CTAATACTAG GAGGTATATA CCTTCATACC AAAACTGGAC AATGCTTGCA CAAAAGAAGG AAGCAATGA GGCCACCTAG  
AAGGAAGACT GGGCATTGGG CCCAGTGAGT CCTGGAAACC TCATCTGTGC CAGCCACCCG GGCATGGCCT GTATGAGTGG  
ATGAGGGTGA CTGTCCACA GACAATAGCC ATCTAGCTGT GATAAAGGAG TCAAGGTAGT CAGCTGCATC TCTTTCACCT  
GTTTGCCAAT GTTACACAGG TTGAAAAGCT AAGGTTTATG TAAAGCAAGC ATCAAAGATG ATGAAATGAT CAACCTGACA  
ATGAGTACTA TGCTGCATTG TCCAGAAAGG AACTGTGGAA GATTTTGGGC TGAATTTCAA AACAGAAATT CCTCACTCTC  
TGGATGTGG CTTACTTGGC CTTTGATGTT CAGAGGTGTT GCCTTTGTGT TGTGAAACA TGTGATTTT GGAGAGAAAA  
CAGAGTTGAA AAACCCACAA GTCATTCCCT GGGGAGTATT ACCGGAATAC AGAGGATAAT TTCAGAACG CAGCAAGGCC  
TCATCTCTGC TTCTAATAGA TAGGAAGAAA GGAAGAGAGG AACAATACTT TTTAAGAAG CTCAGCTTTA TCGCCTTATC  
TCATAGAAAG ATGCCTCCAG TCTGTCTGGC TAAAGGTAAT TGGCATGGGA AAGTCTTTAT CTGTGATTCT AACAAGTGA  
ATGTTTCCCT TCATTAAGAG AGCCTGTGCT GGCTTGGGGA AATGAAACAC TTTCTCCGAT ATGAGTGGG TGTAACCCCT  
GCTACTAAAT ACTCAGAAGA AATAAGGCGG TTGTGGAGCA GTCAGGAATG AGTCACTTGC CTCCTGGAA TATTCAGAAA  
ACTGAATCAA AAGTACATTC TTCTGGGTTT TCTAGTCTA ATAGACTAAG GGTCTCTACT TTGTTAAAT TCTGGGAAAC  
AGCATAGAA GGGAGAAAAA ACTGGTCACT GTAGTCAATG AAATCTGCAA AAAAAACAA AAAGTCTGGG TATGCTGTCT  
AACTAGCTAT GTGACCTTAA GCAAGGTATT AACTCTCTCT GAATTTCAAG TCTTCTCAGG TTTAAATAGC ATATCTGTAA  
AATGGGAATT ATTTTCATAT CATAATGCTG TAGCTTTAAA AAATAAAATA AAATGGATGA GATAATCAGA ATTAAGAGC  
CTGGGATATA TAGTTAATAT ATAGCAGCAT GTAAAGATCC TGTAGAAAT GCTAATTTTA CAGTTAACCA TTTGGAGATG  
ATCCGCCAAA GCTGCTAGTG TAGAGGCAAC TGAGAATTTG CCTGTCTTC AGAATATGAA TAAATAACTG TCAATGATGT  
CTCAAGCCTA GAAAAACCTA TCCATCTGGA TGGGTGGGAA ATTTCTAGGC TAGTATTGAG AAGCCCATTT CTGGGAAAT  
AGGCTCTGGA CTGAGTGAAG GAAAAGAAAC AGTAAACCC ATGGTAAAGC AGCAAGGCTC TCTAGAGGCT CTGGAGAGGA  
TGAATTGAAT TCTAGAAGAT GAAGTAGGGA AGACGCTTTA CCTCTTGTG AAATGGATT CAAAGATTCAA AGACCTTCGG  
GAATCTCAA TTGTATAAAT GGCACCATAG CTGTATGTT CATGGAACAC TACTCCCAG AGATGCCAG TGAAGAAAGA  
ATGCCACAGT CAAATAAGTT TGGAAACACT CCATTATGTG GCCACCTCCT TGAAGACTCT AATGCACATT AGCATGTAA  
ACAGTCTTGA GAAGTCTGCT AGAGCAGAAA TTGCTTCACA TCTGCTAAGC CGGCAGTTTC CCAATATACT TGATTATGGA  
TAGTTTTTTC CTTACAACAC CATTCTCTGA TATGCTTCCA ATGACATGAA ATAAATATAT ATGCATGAGG TTCTTCATTA  
GGGCATACTT TTTAATAGAA AATATTGAGA ATATCTAAA TATAAATGCA CAGCATTTAC CTTTTCTGCA TAACTATAT  
ACAGGCATAC CTGGAGATA CTATGGGTTT GATTCCACA ATATCTCAA AACCAATTC GGTTTTATGA CCACTGCCAT  
AAAACAGCC ACATGAATTT TTTGGTTTCC CAATGTATAT CAAAGTTACA TTTTACTAT ACCATAGTCT ATTATATATA  
CAATAGCATT ATATCTAAAA AACAACGTAA ACACCTTAAT TTAAGGCTGT GGCTGGTTTG ATTTTCTACC CAGACCACTA  
AAACTTTCT CATATCAGCA ATAAGGCTGT TCACTTTCT TACTATTTT TGTGATAGCA CTTTTCCTTT CCTTCAAGAA  
TTTTCTCTT CTATTCACAA TTTGTTTGAT ACAAGAGGAC TAGATTTTAT CTTATCTCAG TTTAAGGTGT TTACATTGTT  
AGCTAAAAAT GCTAATGATC ATCTGAGACT TCAGCAAGTC ATAATCTTT GCTGGTGGAA GGTCTTGCCT CAGTGTGAT  
GTCTGCTGAC TGGGTGGCTT TGGCAATTC TTAAGTAAG AACAACATCA AGTTTGACAT ATCAATTGAC CTTCTCTGTC  
ATAAATGATT TTTTTTTTCT CTGTAGCCTG CAATGCTCTT TGATAGCATT TTACCCACAG TAGAATTTT AAAATTGGAG  
TCAATCTTT CAAACTCTGG TGCTGTTTA TCACTAAGT TTATGGAGTA TTAGAAATCC CTTGTTGTCA TTTCAACAAT  
GTTACACCA TCTTCCCAG GAGTATATTC TACCTCAAGA AACCCTTTC TTTGCTCATC TATAAGAAGC AGCTCCTCAT  
CCACTAAAGT TTTATCTGTA GATTGCAACA ATTCAGTTAC ATCTTCAGGC TCTACTTCTA ATTCTAGTTC TCTTGCTGTT  
TCTATCTCAT TTGTGCTTAC TTTCTCCGCT GAAGTCTTGA ACCCTTAAA GTCACTCATG AGGGTTGGAA TCAACTTCTT  
ACAACTCTCT GTTATGTTG ATATTGTGAC CTGCTCCAT GATTCATGG TATTCTTAAT GGCATCTAGA ATGGTGAACG  
TTTTCAGAAG GTTTTCAGTT GGCTTTGCCC GGATCCATCA GACGAATCCC TATCTATGGA AGCTATAGAT TTATAAAATG  
TATTTCTTT TTTGTGGGG CATAGCGTCT CACCCTGTCA CCCAACCTGG AATGCAGTGG CACAGTCATA ACTCACTGAA  
GACTCAAACT CCTGGGCTCA AGTGATTCTT CCACCTTGGC CTCCCAAAAC ACTGGATTAC AAGCTTGAGC CACTGTGTCT  
AGCCCAAAAT GTATATCATA ACTAATGAGG CTGAAAGTC AAAGTGACTC CTTGATCCAT GGGCTACAGA ATGGACGCTG  
GGTTACCAGA CATGAAAAA ATACTCATCT CCTCATCAT CTCTTTCAGA GCTCCTGGGT GAGCAGGCC ATTGTCAAA  
GAGCAGTAGT ATCTGAAAAG AAATTTTTT TCTGAGCAGT AGATCTCCAC AGTGGACTTA AAATAGTCA TAAACTATGC  
TGTAACAGA AGTGCTGTCA TCCAAGCTCT GTTTTCCAC TGATAGGGCA AAAGCAGAGT AGATTGGCA TAATCTCTA  
GGGCCTTAGG ATTTTGGAA TGGCAATTG AGCATTGGCT TCAACTTTTT TTTTTTTTT TTTTTTGGAG ACAGAGTCTT  
GGTCTGTAC CCAGGCTGGA GTGCAGTGGT GCAATCTCGG CCCACTGCAA GCTCTGCCTC CTAGGTTTAC ACCATTCTCC  
TGCTCTGCC TCCTGAGTAG CTGGGACTAC AGGCACCCGC CACCATGCCC GGCTAATTTT TGTATTTTA GTACAGACGG  
GGTTTCGCCA TGTTAGCCAG GATGGTCTCG ATCTCCTGAC CTCGTGATCC ACCCGCCTCG GCCTCCCAA GTGCTGGGAT  
TACAGCGGTG AGCCACAGCG CCCAGCCTGT CTTCACTTA AAGTCGCCAG CTGTGTTAGC CTCTAATAAG AGAGTCTGCC  
TGCTCTTCA AGCTTGAAG CCAGGCATCA TCTCTTCTG TAGCTATGAA AATCTTAGAT AGCATCTTCT CCCAATAGGA  
AGCCATTTT TATGCCCTAA AAATCTGTCT TTTGGTGTAG CCACCTTCAT CATTGATCTT ACCTAGATCC GCTGGATAAC  
TTACCACAGT GTCTACATCA TTACTTCTGC TTCACCTTGC ACTTTTATGT TATGGGGATG GCTCCTTTC TCTAACCTCA  
TAACTAACC TCCACTAGCC TCACATTCTT CTTTACAGC TTCTCGCCT CTCTCAGAGT TCACAGAATT GAAGAATGTT  
GGGCCTTGA TTACATTTG GTTTAAGGGA ATGCTGTGGC TGGTTTGATT TTCTATCCAG AACACTAAAA CTTTCTTCAT  
ATCAGCAATA AGACTGTTT ACTTCTTAC TATTTTTTGT GATAGCACTT TTCTTTCCT TCAAGAAATT TTCCTTCTA

TTCACAATTT GACCGTTTGA TATGAGAGGC CTAGATTTTA GCCAATCTCA GTTTACACCA TGCCTTTTTT ACTAAGCTTC  
ATCATTTTGA GTTTTTATTT AAAGTAAGAT GTGTGACCTT TCCTTTCATT TGAACACTTA CATGATGATG CCTGGCTTCA  
AAGCTTGAAA GGACAGGCAG ACTCTCTTAT TAGGGGCTAA CACAGATGGC GACTTTTAAAG TTGAAGCCAA TGCTCAATTT  
GCCATTGAAA GCCATTGTAG GGTAAATTAA TTTGCTAAT TTTAATATTA TGGTGTCTCA GGAATAAGG AGGCCTGAGT  
AGAGGGAGGG AGATGGGGAA ACAGCCAGTC ATCAGAGCAC ACACAACATT TATCAATTAA GTTTATCACC TTGAGGGCAC  
AGGTCATGAT ACTTCAAAAC AATTACAATA ATAAAAATAA AAATCATTGA TCGCAGATCA CCATAACAGA TATAATGATA  
ATGAAAAATT TGAAGTATTG TGAGAATTAC CAAAACGTGA CACACAGACA CAAAGTGAGC ACATGTCATT GGAAAAGTGG  
TGCTGATAGA CTTACTTCAT GCAGGGTTGC CACAAATACT CAATCTGTAA AAAATTCAAT TATCTACATA GTACCATAAA  
AACAAAGTAT ACCTGTTTAT ATAATCAAGA CCAACAGAAA CCTAGAGAAA ATAGCTCACT CCCTAGCTCG GAGACATTCT  
AACCAACATA CACTTACCTT TCTTTTGTCT GTGTACAGAA TTCAAATCCC TGTCTCAGCA AAATTGCAAA GTATCAAATG  
TCATGTCCAT CTAATACTCA AAATGCAAA TGTTAAGTCT TGTAAGCCCA GAGACCACTG TATATACAAG TGTGTCTATA  
AGCATTAGTT CTCTCCTAAA GAAAATAGTC CACTTGGTAG AAACAAACAA AAAGAAAAAA AAAGAAAGAA AAAACATTTT  
TTACAAGAAG ATTCAGTCTC TTACCTACAT AAGCAAAAAAT ATGAGATGTT CTCTTATCAT TTTTCCATCT ATCTTATAAT  
CTTTGGTGCT GACTTAGACA CTCATTTTCC TTTTGTACG TGACCATGTA AAAGTTCAAG TCAAGAAAAA CTGTGTTTGA  
CATTGTGTTT GCTGAGTGAT GGGTCCCTAA AAGAAATGTT GCTTGTCTTT TGAAAAGTTT AGCATGATAT GTGTGAATTT  
TTTCATGGCT AATGATTTTT AGAACAGTTG TGATGTGTTT AGGTGTTTTA AGAATATGAA GCATTCAGTG GTTTAAGTTG  
GTTGTTATAA AATGAAAGAA TATGAAGGAA AGCCTTCTTG TCTTAGAACA CACTGATTCA CAAATAAGCA GCTTCTCTCA  
AAATGTTGTA ATTACAAAAA TTCCAAGGCA AATATAATAA ACTCCTGTG GGTGCTATGT CTAGAACTT AACAGCCCCA  
AAGAAAGTCC TGACAAGGCA AAAAATATAT ATATATATAC AAATTGTGGA AGCAGGGTGT TGAAGAAGA ATAAAGACTA  
TATAAGGACA AACTGTTTAA AAGGGAGGGT ATCCTTGAAA GCTTGACACT TGACTCTTTT GACGAGGCTG AGGGAACA  
CTCAGTTTCA TAGATTGCTG GTACGGATGT AAAATAGTGA CATCCCTATA GAGAGGAATT TGGCAATATC TAGCAAAAGT  
GCTTATGCAT TTATTCTTTG ACCTAGTAAT CCGCTTCTA GGATAGTGG TGAAGATACA CCTCAACAAT AAAAAATAT  
ATACATTAGG TTATTAGTTA TGGTTAATT TTTAATAGCA AAATATTTAA AACAACCTAC ATGAACAAAT AGGAGACTTA  
CTGAATAAAC TATGGTATAT CTGTACAATA AAGTGAAT CACTTATGTT GTTAATTTGT TCCAAAAATC CAGAGCCAAA  
GAGTATTTGT TATGCTCTCT TTAGTATAAG AAAGGGGAAA TAAGATATGT GTGCATCTGT TTATTTTTGT GAAAATAAGT  
ACAGAAAGGA TAAGTAAGAA ACTAGTAAAA CTAGTTATCT CTAGTGTTA GTAGAAATAG AATGAAAGTG AATTAGGCTT  
CTTTGAGTAT ATGTTTATAT ATAGTTTTGA CTTTTGAATT ATGTTTATGT TTACATAGTC AAAAAATAAA ATTAATCAAC  
AGAAATAACA AAAAAAGAAG AAATCACAAG CTTTAAATTT TAATACAAC AGAAATAATT GAATCTAACA GTATATCAAA  
GTGATAACGT AAATCAGAA GAAAAAACA TAATCCAACA TACCAGTGA ACACAATATT CTAAGTGTAT ACATTCAGTG  
GTTATAGTCT AAGGACAAGA AAAATTGCAA AAATATCTTG AACTTTAGCT TGTAGGATTT TTATTGGTAG CAATACTAAT  
GTACTAATTC TGAATTAAT GTTCGTGTAT TATAGAATTG AGTAAATGAA TAAATATGTT GATGTTATTG GGAACATAAA  
TTATCATTTCT GGGAGTAGAG AAATATAAAT ATGGACTTGG CAAATGAAAC AAAGACCTGC AGAGAGATAA CCATATAAAC  
TCATTATTTT AAAAAATTATA AGTGTCTTAG CTCTGTTACT GAAAAGGCTC AGATTCAATC TTATCTTGAT AGACAGGAGG  
GCACCCCTTT CTCAGAATCAT GGTTCCTAAA TGCCATTCTC CATTAAAAGG AACAAGGTCT TCTTGAGAA AAGACTGATT  
CTAGGTCTGG ATTAGGTAAA GTACAACGTT AGTCTGGAAT TCTTGTCTGA ATCAGAAGTA AGAAAGTGCT CAAAAACATG  
GGAACATGTC ACAAACACAC GTGAGGCAAC TTGAATCTC ACTGGCCATA TTTAGGACAA TCGAGCATCA AAAAAAAAAA  
AAATGTTGAG AATAATGGAT TCTAACACTT AAAACAAAAA ATAATCCATA GCCACAGAA GGGGAAGAGA GGGGAGCTC  
TTATTTACAG ATGAATATCA AATAGCAAAG ACAGAAGAAA TGACAGAATT AGAGAAACAT CATTITGCAA AACACCACTG  
TAATAATCAA TTCAGGCAAG TATTATTAAT GGATGTATTA CTATTGCGTA AAACCAGTTG GGAACAGGA TATTACATA  
GTCTGAAGGT GTCACCCTAA ACATAACTTA TTACAAGTGG AAAATGGTGC CTTTACAATG AAGAAATCTA GCAGAACCA  
TCTTAATCTA GTGATCAAACT TTAGTATCAC CAATAATGGA TCATAGTGAG TCATGTGTCT CTAATATGA TGCACCAGGA  
AGGATGCAAC GTCATGAACG TTGTATTCTT TTGTATTCAA CAGACCACC AGGGTAAAGG CAGCTTCTC ACTTACTAAT  
CAGAATTGTT GGTTTTAATT CATTITGGAT TTTAAGATTT CTACTTTCT TGTCAGCTCA GAAATTTATT TAAGATGATT  
TTTATCTTTT ATTCATACT TTAGCTTGA GAACCATCA GAGTTCTAA CTCATTGTAT TGCCAAAAAT AGAAAACAGC  
ATGGTTTCTT TTGAAATGT CTAACTTTAA AGTTACTTGT GTGTGCTACT CAGATTCACT TAGCTTTTTT GCCTAGTAAT  
GTAGTATCAT GTGGCAAGGC TATAAAAAATG TTTACAATCT TTTATTTAAT ATGACTCTTG AGAGTTTATT CAAAGGAAAT  
AATTGAATAG TAACAAAAACA CTATTAACAC AAAGCATAGC AATTGTATTT GGGCAACCAA ACCTGTGAAA CTAACCTAAT  
GTCCATTACA GGAATCATT ATGAAGCAAA CACTAAAAATA TTTATTGTGA AGATTATGAG AACATAGAAG ACAGTTATGA  
GAGTAAATTT GAAAACCTGA ACACAAAACT TACATATACT CCAATTGTAA CTTATAAAAA ATACGTGCAT ATAAGGATAA  
AACAGTACAA AAAAAAAAT AGTTGCGTTA GATTGGTAGA ATTATGGCTC CTTTGTCTGT CTTAATTTT TCCTTTTACA  
TTTTGATACA TTATTTTAA TTTAATTTT AAATTCAAAA GAATTTGCCA CTCATCTTTG CCACTTCAAG GAAAAAGAA  
ATGTGTTTCA TTATCTGTT CTTAGTATAG TTTTGGCAAT TTCTCAGT GTAAAAAGAG AATACTATTA ATAATTTAG  
TATCTATAAG ACAATATAAA ATTAAAGAA CTAGCCAGT AACTGGTACA TGAACGTAA TTAATAAATC ATTATGGACT  
TTTTTCTCA CACCAAGTA GGGAGGAATC AGTGGTCCCC TAGAGGCCCA GTGTAGAGGT GGCAGCACA ATCCCTAGGG  
GAGAAGATCT TGGTGATGAT AATTCCTGAG CAGACAGTTA GCTGAGAATT CAAGAGCAGA AAAGTAAGAA AGAAACAACT  
TCTTGCTAAC ACCTTTCCAC CCACGTTTCC CTGTTCTGTT GTACTCTGCT TACCCTTCA TGGATGGAGG CAGAGGAAAG  
AGAACCAAGT TTGCTCTTAG TCATTCACCTA TGTTGTTTAA TCTGCTTCC ATCTTTCTTA TCAGTTCAAA TTAGAATGTA  
GACCTGAATT TAAATCCCCG TTCTGTCAGT TATAATGTGA CCCTAGACAA AACACATTCT CTGAACCTCA GAGAACATTC  
TTCAATTTGA GAATGGGAAG ATTAATCTAT ATTCCACTTG GATGGCAAGT CTTTATAAA CTTTATAACC TAAACATGTG  
TGAGTTGCTA GTATCATTAT GTTGGTAAAG TTATCTGTAG ATATGTAAAC AGAACTGTTT TGCTAACTC CACTAGCATG  
GTTCAAGTTT AGAGAGTGTG GAATTAAGG GCTTTATCCT CAAATATGAC TTAATCCGA TTTTCTCAT CCACTTTCTC  
CCACAAACAA ATCCTCAGGA AATGACAAAC TTTACATGGT TAAACATCAG TTTTGTGTTAG TCTTTGACAT CCACATGGT  
AAATCATACA TTTGAAAACT GCTTATATTT GTGTGTCTA TGCTAAAT GAAAAGACTT ATTGAGGAAT AGAAGACTAC  
ACATTTTCA GCAAAACACTG CAGTTTTTGC AGAATTTCC CAGGCACCAG TCTCCAGGAA TTTATTGGCT ACTAACAATA  
CTAAGATATG ATGAATGAG GAAATCAAAA TGGAGATCTT GCAAGTTTGG TGAGAATGGG TGAATGGTCC AAATGAAGAG  
ATAAGTTGTG AATATTAGT ACAAGTAAAA ATTATTACA ATGAAGACA TTTGTCAAT AGCTATGAGA ATTTACCAT  
TGACCCAGAA ATTCCATTT TTTCTCAGA AATACCCAGC TAGGTATACA TATAAAAAAGT TATTCATTAC AGTATCGTTT  
TTCATAGGAA AAAGTTTAA AAATCAGAAG CTATCTAAAC TATGGTATAT CTAGGTCATA GAAATCAAAT GACTAAAAAT  
GTTAATATAA GCATATGTTT TAAATTAAC TTGGCTGGG TCTCAGCAA AATTGGCTC TTAACATTGC ACTCCAGAGT

TAGACTTACC CACTCAGTCA CTTATCATGC AGGAGCAGAC TCCTAATACC ACATATCATA GAGCAGAGTA GGACACAGGT  
TCTCTGCAGG CAGGCAAATC CCAAAGAGAA GGGAGGAAAG GGCTGAGACA CTGCATGGTC AATTTCTCTT GAACTCTGCA  
ATGTACGGAG GTGGACAGTG TCCACAAAGA TTGCTCCCTT GGACCCACCA TCATAATAAC ACAACGGCTT TGTITTTGTT  
TTGTTTTTGT TTTTGTACAC GGAGTTTTGC TCTTGTGTG CAGGCTGGAG TGCAATGGTG TGATCTCGAC TCACCACAAAC  
CTCCACTTCC TGGGTTCAAG TGATTCTCCT GCCTCAGCCT CCTGAGTGGG TGGGATTACA GGCATGCACC ACCATGCCCCA  
GCTAATTTTG TATTTTATGT AGAGACGAGG TTCTCCACG TTGGCCAGGC TGGTCTCAAA CTCTTAACCT CAGGTGATCC  
ACCCGTCTTG GCCTCCCAAA GTGCTGCGAT TACAGGTGTG AGCCACCGCG CCCAGCCCAC AATGGCCTTT TGTTTACATC  
TCTAGTGCAG CACTCATTTC ATGTTCTTTC AAGAAGAATA CATATTTTAT CTTTTATTT TATACAGCAA TTAGCACAGT  
GCCTGGCATA AGGAAATGA TCATTAATAAG CTGGGTGAAA AACCTAATAA AGCTACTGAG GATAGGAACT GCAGACCAGC  
ATGGAAGAA AACTATGAGC CAGATATTGA CATCATCTG AAAGGCAGAA GATTTAGTAT AGGCAAGAAG TATGCTTTTG  
GAATATAGAA AATCTGGATT ATGATAAGAA AAGAATCATA TTTGTCTTAT CTACCTACT CACTTCTCAG TTCCACATGT  
TTCTGAGGCT GTTTGTCTT ACTTTCTTT CTGTTTTATC CACTCTTCT GTTCTTTAGA TTGGATCATT CCTATTGAGC  
TGACATCAAG TTAAGTACC TTTTATTTTG TCCAACTGC TGTAAATGC ATCCAGTGAA TTTTAACTT TATATAGTAT  
ATCTTTTGT CTTAGAATT CCACATGAGT TTTTAAAGT TCCATTTCT TGCTGAGATC TCCTATTTGT TCATTCATTA  
TGACCATATT TTCTCTACA TTATTGAGCA TAATTATAAC AGCTCTTCTA AAATTTCTGT CTGCACATCT TAACACCTGA  
ATTATTCTGG GGTGAGTCT TGTTACATTG CCTATTACA AAAACAGTAT AAGTCACATT GCCTTGTTC TTAATATGCA  
AAATGATTTT TGATTGCAGA CTAGACATT TGAATTAAC ATTATAGAGA TTCTGGATTG TCGAGAGAGT ATTGACTTGT  
TTTTCCATC AGGCAGGTAA CTTGACTGGA CTCAAACCTC AAACCTAGG TCCTCTGTAA TGGGCAACTG CAGTAATCTT  
TGTTTGTCT TTTAAGACTT ATTGGCCAGG CACGGGGGCT CATGCCTGCA ATCCAGCAC TGTGGGAGGC CAAGGTGGGA  
GGATCACCTG AGTCAAGGAG TCGAGACCA CCTGAGCCCA CATGGTGAAA CCCTGCCTCT ACTAAAAATA CAAAAATTAG  
CCGGGTGTGG TGGTGGGCGC CTGTAGTCCC AGCTCTCAG AAGGCTAAGG CAGAAGAATC ACTTGAACCT GGAAGGCAGA  
GGTTGCAGTG AGCCGAGATT GTGCCACTAT ACTCCAGCCT GGGTGACAAA AGCGAGACTC CCTCTCAAAA AAAAATTTAT  
TGGCACTGCT TGGCATCTGC TATGAATACA TGAAGTTCAT GGGTCAGCTA TAGATCTGGG CACGTTATAC ACAGAATTTG  
GGTCTCCCTT TCTCTGGATT TCTCTTTTC TGGATTCTT TTCTCATTT CCAGCAGCTG TGGTTGCCCT AAACCTGGTC  
CTCTGTTTCT TTACGGCAGT AAGATTGGG AACTTTTAGG TTTTACCTGC CTCTCAGACA AAATAAAAAA TAATTTTCAT  
CTTGATGCTA TCCTTTCTT CCAGATGTAG ACACCTCTCT AATTTCCAGT TGCTTTTTAT TGCTCTCCAG AGTCTAAAGA  
TTATCATTTT TTTTGTGGG AGAGTTGGTC TGATAAAAC TACTCCCCA AAACCTGGAAG CTGGAAGCTT GTAATTATGA  
ATAGACTTTG AGTAGTATTC TTCTTTGGAA AAGGATTTTA ACTACTCCT ATGTACTTCT TTATTTCTGT TTTTCTCAT  
CCGTAATCTT TTTATTTTCA TACTTCTTAA GTCAGACAAT TTTCTACTT GAAGATTCAG TGACTGCTAT CAAATGACCC  
CCATATTACT AAATACAATA TCCCAACTG CATTATAAAA AAGAAATTT ACTGTTTATT AGTAAACAAT GTTGTAGAAT  
AGTAAATAT TGCTGGGCTT TGGAGCCAGA TAATCAAGGT TAGAATCCCA GATTCTAACT TACTAGCTGG TGTATTAGTC  
CTTTCTCATG CTGCTAATAA AGACATACCC CAGACTGGGA GACTGGGTAA TTTATGAAGA AAAGAGGTTT AATTGACTCA  
CAGTTCAGCA TGGCTGGGGA GGCCTTAGGA AACTTACAGT CATGGTGGCA GCAAGGAGAA GTTCCAAGCA AAGAGGGAAA  
AGCCCTTAT AAAACCATCT GATCTTATGA GAACTCACTC ACTATCAGCA GAACAGCATG AGGGTAACCT CCCTCAGTT  
TAATTACCTT CCACCAGTTC CCCCCATGA CACATGGGGA TTATGAAAGC TATAATTCAA GATGAGATTT GGGTGGAGAA  
ATAGCCAAAC CATATAATTC CACCCCTGGC CCTCTCAAA TCTCATGTCC TCACATTTCA AAACCTCAATC ATGCCCTCCC  
AACTGTCCCC CAAGGTCTTA ACTCATTCCA GCATTAAGTC AAAAATCCAA GTTCAAAGTC TCATCTGAGA CAAGGCAAGT  
CCCTCTGCC TTAGAGCTA TAAAATCAA AGCATGTTAG TTACTCTTA GATACAGTGG GGGTACAGGC GTTGGGTAAG  
TACACTGATT CCAAATGGGA GAAATGGCA AAACAAAGA GTTACAGACC CCATGCAAGT CCAAAACCA ATAGGGCAGT  
CATTAACATT AAAGTTCCAA AATGATCTCC TTGACTTCA TGTCTCATC CCAGGTACA CTGATGCAAG AGGTGGGCTT  
CCAATGGCTT TGGGAGCTC TGCCCTGTG GCTTGCAGG GTATAGCCTG CTTCTGTGT GCTTTTTAC AGGCTGACAT  
TGAGTGTCTG TGGCTTTTCC ATGAGTATGG TGCAAGCTGT TGGTGGATT ACCATTCTGG GGTCTGGGCC AGGTGCAGTG  
GCTCATGCTT GTAATCCCAG CACTTTGGGA GGCTGAGGTG GGGGATCACA AGGTCAAGG ATCGAGACCA TCCTGGCTAA  
CACGGTAAAA CCCAGTCTCT GCTTAAAAA TACAAAAAT TAGCCAGGCG TGGTGGTGGG TGCTGTAGT CCCAGATACT  
TGGGAGGCTG AGGCAGGAGA ATGGCGTGA CCGAGGAGGT GGAGCTTGCA GCGAGCTGAG ATTGTGCCAC TGCCTCCAG  
CCTGGGCGAG AGAGCAAGAC TCCATCAAAA AAAAAACAA AAAAACCAT CTGGGGTCTG GAGAATGGTA GCGCTTACAG  
CACCACCAGG CAGTGCCCCA GTGGGGACTC TGTGTGGGGG CTCTGACCCC ACATTTCCCT TCTGCACGGC CCTAGTAGAG  
GTTCTCCATG AGGGTCTTAC CCTGCAGCA AACTCTGCC TGGACATCCA GGCATTTCCA TACATCTCTG GAAATCTAAG  
CCGCGGAGGT TCCAAACTT CAATTCTTGA CTCCTGTGCA CCCACAGGCT CAATACCACA TGAAGCCAC CAATGCTTGG  
TCAGGGCTTG AACCCTCTGA AGCAATGGCC TGAGCTGTAC GTTGACACCT TTTAGCCTAG ACATCTAGGA CACAGGGCAC  
CATGACCCGA AGCTTCATAA AGTGGGAGGG CTTGTGGACT AGCTGAGGAA ACCATTTTCT CATCCTAGGC CTCCAGGCCT  
GTGATGGGAA GGGCAGCCAT GAAGGTGCCT CAGATGCCCT GGAGAGCTTT TCCCATTTGT CTTGGTAACT AACATTCAGC  
TCCGTGTGCA GCACCAACTT ACTTATGCAA ATTTCTGTCA CTGGTTTGAA TTTCTCCCA GAAAAACAGGA TTTTCTTTT  
CTATTGCATC ATCATGCTGC AAATTTTCAA ACTTTATGC TATGCTTCT GTTGAAGACT TTGCGGCTTA GAAATTTCTT  
CCCCAGATA CCAAAATTA TCTCTCTCAA GTTCAAAGT CCACAGATAT CTAGGGGACA AAATGTTGCC AGTCTCTTTG  
CATAGCAAGA GTGACCTTTA CTCCAGTTCC CACAAGTTT CTCATCTCCA TATGAGACCA TCTCAGCTTG GACTTAGTTG  
TCCATGTTAC TATCAACATT TTGGTCAAAG CAATCAACA AGTCTCTATG AAGTTTCAA CTCTCCCATG TTTTCTGTG  
TTCTAATAGC CCTCCAAAT TTTCCAACT CTGTCTGTTA CCCAGTTCTA AAGTCACTTC TACATTTTG GTTATCTTTA  
CAGCAGTGGC ACTCCCCATG TACTAATTT ACTGTATTAG TCTGTTCTCA TGCTGCTAAT AAAGACTTAC TCGAGACTGG  
GTAATTTATA AAGAACAGAG GTTCAACTGG CTCACAGTTC AGCATGGCTG GGAGGCTCA GGAACCTTAC AAACATGGTG  
GCAGCAAAGA GAAGTTCCAA GCAAAGAGGG AAAAGCCCCT TATAAAACCA TCAGATCTTG TGAGAATTCA CTATCATGAA  
AATAGCATGA GGGTAACTGC CCCCATGATT AATTACCTC CCACAGGGTC CCTCCATGA CAGGTGGGGA TTATGGGAAC  
TACAATTCAA GATGAGATT GGGTGGGAC ACAGCCATC CATGCCAGCT AGAGAGCCTT AAGAAAGTCA CCTAATCTCC  
ACAAATAAAA GTTTTCTTAT TTGTTCAAACA AAAATAATGA CCCCCCTT ATGGGATTT TGTGAGGACA AATGATAACT  
AACATAGCCT TGCATAGTGT CTGGCAGAAA ATAGCTACTC AAAAAATAT AGAAAAACA TTTAAACATA GTAGACTTTA  
TTTTTAGAG TTTTATGTAC AAAGCAAAAT TGAGCAGAA GTACAGAGAG TTTCCGTATA GCACTCCCTA CCCCCAAGCA  
CAGATAGCCT CCCCCAGTAT CAGCATCCCG CACCAGAGTG GTACATTTAT TAACTGAT GAATCTATAT TGACGTGTCA  
TTTTCATCCA AAATCCATAG TTTATATTAG GGATGCTCT TGGTGTGTA CTTCTATGG GTTTTGACAA ATGTATAATG  
ACATGTATTC ACCATTACAG TATCATAAAG AATAGTTTCA CTGTCCTAAA AATCTTTGAT CTTCTTCTA TTCATCACTC

CCTCCCCATT AATCCCTGAC AACTACTGCT AATTTTCCTG TCTCCATTGT TTTGCTTTTT CCTGAATGTC ATATAGTTTA  
AATATACAGT ATGTAGGATT TTCAAACCTGG TTTATTTTAC TTAGTAATAT GCATTTGATG TTCTTCCATA TCTTTTCAAA  
GCTTCATAGT TCAATATTTA TAGAATTGAA TAATATTCCA TTGTCTGGAT GTACTACAGT TTATGTATTC ATTCACCTAT  
CAAAGAACAC CTGGTTGCT TCCAAGTTTC AACAATCATG AGTAAAGCTG CTATAAACAT CTATGTACAT GTTTTTTTGT  
GAATTGAACA TTTTCAGCTT TTTTAGCTCC ATTCTAGGA GTGCAATTGC TGGATTGTAT GATAAGGGTA TGTITAGTGT  
TGTAAGAAAC TGCCACGCTC TTCCTAACTG GATGTACTGT TTTGCACTCT CACCAGCAAT GAAAGAGTTC CTGTTGCTCC  
ACATACTCAC CAGCATTGG TGTGCTCAAT GTTTTGAGCA ATAGCATTTT GATCTAACTT TTCCTAGGTA TTCTTTTGA  
AGGAAATAAT ATGACAGATA ATAGAGAAAG GATATACGAG GACAGTTCTG TCCTTTATTT ATAGTCCATC ATTTAATGAA  
GGACTCTGTC CACACTTGGT ATTTTAACT CTGATCCTCC TCTCCCATGA ACTCTGACAA TCTCCTAAAT CCCTGTTGCT  
GGCACACATG GTTGTGTATC AGGCCCTCTG TGGTCTGTCT GAAGCATGGC TTTTTTTTTT TTTTTTTTTT TTTTTTTGAG  
ACGGAGTCTC GCTCTGTCGC CCAGGCTGGA GTGCAGTGGC GCGATCTCGG CTCACTGCAA GCTCCGCTC CCGGGTTCAC  
GCCATTCTCC TGCTCAGCC TCCCGAGTAG CTGGGACTAC AGGCGCCCGC CACCACGCTT GGCTAATTTT TTGTATTTTT  
AGTAGAGGCG GGGTTTCACT GTGTTAGCCA GGATGGTCTC GATCTCTGA CCTGTGTATC CGCCGCTC TGCTCCCAA  
AGTGCTGGGA TTACAGGCGT GAGCCACCGC GCCCGGCTT TTTTTTTTTT TTTTTTTTTT TTTAGAGTGG AGTCTGTCCAC  
TCTGTCAACC AGGCTGGTGC AGTGATGCAA TCTTGGCTCA CTACAACCTC CATCTTTCAG GTTCAAGTGA TTCTGCCACC  
TCAGCCTCCC AAGTACCTGG GATTACAGGT GCCCGCCACC ACACCCAGCT ATTTTTTTGT ATTTTATGTA GAGACGTAGT  
TTACCATGT TGGCCAGGCT GGTCTCATT CTGACCTGA GTGATCCACC TGCTTGGCC TCCCAAAGTG CTGGGATTAC  
AGGCATGGGT CATCATGT GGCCTGAAGC ATGACTGTG CTTAATCAT ATGAAATACT GCTCTGTATT GTTATCTATT  
TGAAATGCCA CACCTCTGA GCTAAATTGC AAGCTTTTAT GGAGCACAAA CCATATTTAT ATATATTAGC ATGATACCAT  
GACACATATC AAAAGCTGTT ATATATTGTT ACGTGAATTG ATTCTTCTC AGTTAAGAGG ACCTCTGTAG TAGCATTTTC  
ATACCGTTAA TTTTTCATT TGTGCCCAGC CCTACTCTG TGAAAAATGA AATGAATCCT GTTATCATTT CCTCCCAGG  
CCTTTTCTCC TTGTGGACAA TGTGTGGCTC AAGAGAAAAT TCAGTCAGTA AATTGTTC A GTGCACAAAC TCTTTATCAC  
CTCTCACTGT TCTCAAGTGA GATAGAACAG AACATCCATC CAGTGTCTTA CAAATTGTCT GGTATATAGT AGGCACTCAA  
TAAATGTTTT TTGAATAAAT GCATACATGA ATCCTATTCC TATATATAGT ATGGTAGACA GATCATTGAT ACCCAAAGAT  
GCCCAAATG TGATCCCCAG AACTGTGAA TATGTTACAT TTCATGTCAA AAGGGACTTT GCTAATGTGA TTAAGGATTC  
AGACCTTGG ATTGTAAGAT TATCCGGAT TAACCGAGG CAATGAATC ACATGAGACC TAAAAAAGC AGAAAAACAT  
TCCAGCTGG GTTAGAGAGA GATGAGACAG AGTAAAAAGG AAAGAGATTC AGGGCATGAA AATGACTCTA CCACTGTTG  
CTGGCTTTGA AGATAGAGGA ACTAGGCCAC AAAACAAGGA GTATGAGTGG CCTTAAGAAA TAGGAAAAAG CCTCATCTG  
ACAGCCAGCT AGAAAGCAGT CCTCTGACCA CAAGAAATTG GATTCTGCCA ACCACTCAA TGAGCAAGGA AATGGATTCT  
CCCTAGAAC CTCCAGAAAG GAACACAGCT CTGTAATGCC TTGATTTAG CCAGGTGAGA CTGTTCAG ACTTTTGACC  
TATGGAATA TAAGATAATA AAGTTTTATT GTATGCTGCT AAATTTGCGG TAGTTTATTA CTGAAGCAAT GGAAAGCCAA  
TACAGACAGA ATATACAGAG AGAAAGAGAA TAGTTCTTT CCTGATAATT TGTAATATT TGGGTCTTCA CTGGACAAGC  
TTCACAGAGG. ATTCAGTGT. TCCCTAGCAA ACCAGCATGT CCAGCTCTGC AGCTCCCTT TCTTAGGCC AGCATATGTC  
AGCTGTGTGC ATAGAAAAAT CAAAGCAGGA CCTGAGTAG TTGGAAGAA AAGATGGTTG GAAATGGGTT GCACTTCAAG  
TGAGGAAACA AGAGGTAGGA GACCGCATC TCTTCTCAT ATGTCCAGG CTGACTCTTG TGAGTTGTTT TCCCTGGAG  
GCTATCGATG ACAGTCACAG TAACCTGATG GAACCTGGAT CATGATGAAA GAAGTAAGTG TCAATGGCTC CGACTTCCAA  
GGACTCTGAT GTCCACAGC ACTAGCTAAA CAAAGCCAGT TGGAATGAG CTAAATGGG GAATTTCTCTG AATATATTCC  
CTATTGTTAG GAAGCCAGGT TGGCTTCTT GCCTACAATT ATGCCAAGCA GTCACACTAT AGAGTCCCTA GGGACATGAT  
ATTAAGTGAT TCTTTTAAAC CAAACAACCT AATAATCATT TATACTAATA GCAAAACGGC CAACGGCTGA TATTCACCT  
GAAGTAGAAT TGGCTATCCA ACTGGAAGAG AAGACAGGAA GACGTGATCT CCAGGGAGCC ACTAAAAGGA TTGGCACCTG  
CCTCTGGATT CCCTTTTCC TTATATTACC TCTCAGCACT GGCAGGCTT TATTTACAGGA TACAGTTTCA CAAGTATTAT  
GTCACGTCTC TGAGAATTAT GTTGGTAGAT ATTTGCTCT CTGGCCAGAA AGACCTAGTT TGGAGTCTGG AGTCATGAAG  
GTGACATACA TGTAGTAGT GACATAAGTG TAGCTAGTAA AAATAGTGAG TAATGGCCCT GAAATTCAT TGAATGCCAA  
AAGTCTGAC CAGGAACAAG CATGCTCTAG CTTATCTCAC AAGGAACCTG ACAATTTTCT TCAAAAATCC TAGTAGCTAA  
GATTTCTTAG TAACAAAGCC ACTAAGGCAC AATTATGATT AACTTGACCC TTAGGTGACT TTTAAGGACT ATCTATAAA  
ATATTACAAC TAATAGTGA TCCAAGCCAG CACACTCTGC TATATAAGAT TAATTGACAG TGCCACACT GGTAATAATA  
GTGTTTCAT AAATACATTA GAATTCATT GCACTTTCTA CACAGCCCCA AGTCCAGAAC TTTCCCCAGA ATAGGTCTAT  
GTTTTGCAAT CTGCTACTCC ATACAGAGAT TTGAGTTCAC TTGGCAATTT AGTGCTGCTT ATATGTGACC AGTTAGTCTG  
TTTTACTTAT CTATGCTTA AACATTACTA TACTTACTAA CTCCAAGATG CCTGGTCTCA ACTTGACAAA AATACCCCAA  
GTGGGAAAT CCTATGTGA ATATGTAGAT AGTCACAATT GCTGGTTGAT GATGATCTGT CTTTTCTGT ATTTGAGAAA  
ATGGAGATAA AATGGACCAA TCCAAATAAT GGATTAATAA TGGGAATAGG TGAGAGAGAG AAGGAATAAC ATGGTGCTC  
TCAGTGTCTG GCTTAGGCAG TAAACACTTT CGTTAATAAA GACGGAATAA AAAAAAGGAA TAATTGGTGT CTAGGGGAAA  
ATAATGAGCT CAAGTTTTAA CACTCTGAGT TCCCGGATGT GAGACATCCA GGCGCATTTA TCCAAGAGGC AGTTGGAAGC  
AACGTTCCGG AGCTTAGGAG AGAGGCATGA CAAAAGCTG GTGGGACTGT GAAAAGGTAT GGCCATTCTG GAAAACCTGT  
TGGCAGTTTC TTAGAAAATT AAACATGTAC TAACAACCCA GCAATTGTAC TCTTGAGCAT TTGTCCAGAA TAAATGAAAA  
AAAAAAAAC CATTTTTTTT ACACAAAAAC ATATACATGA AAGTTCTAG AAGTGTATT CATAAAAAAC TGGAAAAAAC  
TGAGATGCT TATTGAGTG AATGCTTAGG CAAACGTTGG TCTATCCATA CAATGGAATT ATGCTTAGCA ATAAAGAGAA  
AAGAACTATT GATACATGCA ATAACACAGA TGAATCTCAA AGGAATTAAT GCTGAGTGGG AAAAAAGCA CATCTCAAAA  
TGGTATATAC TGTACTATT TATTTACTTA ACATTTTAAA AATAGCAAAA TCATAGAGAT GGAGAACAGA TTAATGGGTA  
CTGTGTTTTG GGATGGGGAG TGAGAAAAGG GTAAGGTGTA AATATAAGG GGTAGCACAA AAGAGCCTTG TGGTTGAAGG  
ATTCTATGTC TTGGTTGAG TCGTGATTGC AGGAATCTAC ATGTGATAAA ATTGTATGGG TCTACATACG CATACACACA  
AGAGCATATA AACTGGTGA CATGTGAAGA AGCTCCGCAC ATTTGTCCTA CATCAGTATC TAGTTTCAA TATCAGACTA  
CAGTTATACA AAACATTGTC ATTTAGGGAA ACTGGGTAAA GGGAACACAG GACATTTGGC ATATATTTT GCAATTTCTT  
GTGAATCCGT AATTATTTAA AAATAACAGA TACTATACAT ATCAAAAATT TAATGTCATA AAGTTGATGA GTTACCTAG  
TGGATAGCTT TGTTAATATC TGCTATAAGA CTAAGTAAA TGACAGTTAT GCAAGTATAA GCTCAGAGAA GTTCTCTCC  
CCTTCGTAAT TGAAATGAGC AAAAGAAATG AAACAGGAAA GGCAAGCAGT ACTGAAAACA GGAAGGGCT CTTCCCCATA  
TAACTATATC TGCGACTTCA ACAGCTATT ATCCAGAAAC ACAGCTCTT GCGCTAAGAG GAACTTTGG ATAACAATAT  
GTTTTCACTC TCCAAGAGAG AAAATGGATA GATTAATTTT TAAGAAAAAA AAAAAACCT CACCAATTTT ATGCTGTGGC  
TTGCACCTT AATCCAGCT ACCTACAAGG CTGAGGTGAG AGGCTTACTT GAGCCAGGA GTTCAAGGCT GCAATGAGCT

ATGATTGATT GTGCTATCGC ACTCCAACCT GGAGTACTAA GCTAAGAGCT AAGAACACAG CTGAGAGCGG AGAAGAAACA  
AACAAATCTG ACCAATAACC CCCACTCCCC TCATTTTACT GGAGTGAGCT GAGACTGCTG GCAAACATGG CTTTGACCT  
AGCCTGAAC GTAGCAAAAG TCATCAGATA TTTTCCACC AATCAACAGA CAGAAGTGGG GAGAAAAACA TCGTAGTTCA  
TAACTACAAC AAGCAGATAA ACGAAGGCCA TGGTGAGGGA TGGAAGACAT TGTGATATAT CAAAGGCAGG CTCATTTAAA  
ACTCAACCCA AATTCCAAAC AAAATATATA ATTGAATATG TATTAATGCC AAAGGAGCTT GAGTGAGCTT TAGCACAAC  
CCCGCCCTCC AGCCCCCACC CAAAAAATC ACTCTGTTCT TCCTCCATTG TTTGATAGGC ATACTTGCTG TTTTCTCACA  
GCCAAGGTAC AGAGGGGACT TAGAGGAACT AGAACTCTAA TACACTGCTA GCAGGAATGT AAAATGAAGC ATCTACTTCA  
GAAAACCAT TATCAGTTT CTAGAAAGTT AACATAGAC CCACCATGCA GCCCAGCCAC TCTACTCTA AGTATTTACA  
CAAGAGAAAT GAAAACGTGT CCCACACAG TTGTATTTAA AGGTGATGGT TAGCCTTGTG TGTCAACTTG GCTAGGCTAT  
AATACCCAGT TACTGAATCA AATAGTAATC TAGGTGCATC TGTGAAGGTA TTTTGTAGAT GTGGTTAACA GCTACAATCT  
GTTGACTTCA AGTAAAGGAG ATTGCTCTTG ATAGTATGGG TGGGCTTCAT CCAATCAATT GAAGGCCCTA AGAGCAAAAA  
GTAAGGTTTC CCGGAGAGAA AGAAATTCTG CCTCAAGACT GCAGCCTCAA CTCCTGCTG AGTTTCCAGT CAGCCAGCCA  
GCCTAAAGAT TTGCTAGGCA TTATAATCAC ATCAGCTAAT TTCTTAAAT AAACCTCTTT ATATATATTG ATACAATGAA  
TGGTTATAGC AGCCTTATTT GTAATAGCCA CAACTGGAA ACAACCTAAA TGTCTTCAA TAAGTGAATA CATAAACAAA  
TTGTGGTATA TCCACAATTT TTACGCAGCA GTAAAAAGGA ATAAATGGTT GAATAAGGAA TAAACACATA ACAAGGATGA  
ACCTTAAAAAC CGTAAGGCTG AATGGAAAAA GTCAGACAAA ACTAATACAT ACTGAATAAT TCCATTTATA TTGAAGTTCT  
AGAAAATGAG GACTAACCTA TAGTAACAAA AAGCAGAAAA ATTTTGCCCA CTGGTGATGG AGGGGGCGCA GGTATTGTAG  
AGTATCTGAG AAAGGACAAC TGGATAAAAG GGGGCACAAG AAAACTTTTG AGGGTGATTG ATATGTTTCA TATCTGTGG  
CATGGTTTCA TAGGTGCATA CATATGTCAA AACATCAAGT TATACACTTT TAAATGTTC AGTTTACTGT ATATCTATTA  
TACTTCAGTA GAGAGGAAGG AAGAAAGTGG GCAGGGTGGG GGAGAGGAAA GGAAACGAGG GAGGAAAGGC  
CCTAATAGGA AGGATTTTGG AGTTTAGATT TAAAAATGAT AAAGGATGTT TGACACTCTA GGCATATGAC GAATATAGGA  
TTATGAGTCC ACAAAAACCA CCAGGAAGTC ATGTATGTTT ATACTTTTAA GTGAAGGATC AGTGGATTAT CAACTCCCTA  
ATGCTTGGCC TCTCTATGAC TGGCTGCTGT CTTCTCATC CCAATCTCC TTCCAAAGCC CTTGCTTAA ATGTAAGCCT  
TCTTCTCTCC TTTCAACACA TCTGCTTCC CGTGACAAA TAAGTTTTC TTAAACAGAA GTGACAGCAT ATTATTGTGA  
CAATTAAAAA TTTTGGCCA GGTGTGATGA CTCATGCTG TAATCCCAGC AATTGGGAG GCCGAGATGT TGGATTACC  
TGAGGTGAGG AGTTCGAGAC CAGCCTGGCC AACATGGTGA AACCTGTCT CTACTAAAAA TACAAAAATT AGCTGAGTGT  
AGTGTGGCAG GTACCTGTAA TCCAGCTAC TCAGGAAGCT GAGGCAGGAG AATCGCTTGA ACCTGGGAGG TGGAGTTGC  
TGTGAGCAGA GATCAGACTA TTGCATTCTA GGCTAGGAGA CAGAGTGAGA CTCGGTCCCC AAAAAAAAAC ACATTTTCTT  
TTAATGTTT CTTCTGCTT GTAGGAAAAA GGCTCTGACT CCTTAGCCTG GGCATCAGAG CTCTATCTAA ATGGACTTTA  
ACCTGATTTT GTGGCACTAA TTCCATTGCA GTACTTGTCC GCTCACTGGC CTGCTCTCT CTGCCACTAT TTTTGAATA  
ATGCTCTCTC TCCATCTTGT TACTCAACT ATATCCAACC TCTAAGGCTG TGCTCTACA AAGCTCTCCC TGGTACTTC  
AGCCACAGA GATATTTAAC TGCTCTGAG TTCAGGACAT TCTTCTGACT CTTTAAATCA CATTTACTTA TATATGATCT  
TGTGATATTT TTTGTTGACG TGTTTACTTT AATTTCTTC CATAACCTAT TCATTCAACA AACTCAACA TTATTATTA  
AATGCCAAGT TAGAAAAATA TTATTGATTT TATATAGATT ATAGATATGT TTGAAATTTT ATTTGGCAAT CTGCAAGTAG  
AAAAATAATT ATAATTGGT ATATCTGTGA TAGAAGTATT AGTGACAGAG CCATGGGGA CATAATCCAG CCTGGAAGTT  
CAGGAGAGAT ACGTGGAAGA AAGGACGTCA GAGCCTTTT CTACAGGCA TGAAGAAGAA ATTAATAAAA TTTTCTTTT  
TTGAGATGGA GTCTCACTCT GTCTCCAGC CTAGACTGTG GTGGTGCGAT CTCTGCTCAC TGCAACCTCT GTCTCCGGG  
TTCAAGTGAT TCTCTGCTC CAGCTTCCA AGTAGCTGGG ATTACAGGTA CTGCCACAC ATGGATGATA AATATGATCA  
TATTTTCTG TCTTTTCTC CTCTAGTTGT CTCCCTGAA GAAAGGAATG CTTTATAG ATGACAACT CCCATTCTCA  
AGAACAAGGA TTTTGGACCA ATTTAATTTA ATCAGATGTC TGGCTTTGAC CTAGAAACAC AGTCACGAAA CTTGGTGATT  
AGAGACCAAT TCCCAACAT GAGCATTCT TAGGAAACAC AGTAAAGATC TGAGAGACCC AAGAGCAGAA GGGCGAGAAA  
CCAAAGCCA TCAGTTTGA TAGGAAACAC CTTGTTAGC CTAATCTTTT TATTTTATT ACTCTATTAG TCACTACAAC  
TATTTTCTGA TTGCTATGGT GATAGATGGT TTAACAAG CTTTATTAA GAATTGTAC ACCATGGTCT CAGTCAAAAA  
CACCAACATT TTTATTGGTA TTGACAATTA TGGGAATATC CAATTCCAAG AAGACAAGGA GACCTCTGAA CTTTCTAAAT  
GAAGACTCCA ATCTTCTGA TCTGATGGGA AGCAGCTGG CAAGATTACC AACCACCACC ACAGAGAGTG GACTCTAAGC  
TAAGACTTAA AAGATAAGTA GAAATTATCC AGGTAAAGAT GTGTACAGAG AAGGAAGTAC ATCCAGGGGA AAGAACAAT  
ACGTGCAAAA GTACGGAAT GGTAAAAAGT AATACTACAT AGTCAAGGCC AAGCAGAGTT CAGAAGGGAT CTGGTGGTGA  
AAAATACGGC TAGAGAAAGC AGCAAGGATT GGCTTCTAAA ACCTATGTAG TATCTTGGAC CTTACCTTAA ATGTAATGAG  
AAGCTTCTAA AGAATCTTTC ATTTATTCAT TCATTGAACA AATATTTTGA GGCTTCTGT GAAGAACATC ATTTCTAAGTA  
GTAAAGATAC AGCAGTGAAT AGGACACATA AAATCTAGA TCTCAGAGAA TTGACATTCC AGAGAGGGAA AGGTAGACAA  
TAAATACATA ACAAATCAT TTAACAAGAT GATTCAGAC AATGGTACGT ACTGTGAAA AAATGAAACA AGGTAATGGA  
CAGCGAAAAG GCACTGGAAG GAAGCCTGCT TACCTTTGCA TGGTTAGAAA AGATCTCTCT AAGAAAGAGA CCATATGTA  
GCTGCGACCT GAAGGATACC GAGAAGCTAG GTGTGCAAG AGTGGGGGAC AGAACTTTTG GACTGAATAG CAAATACAAA  
TGCCCTTGGG TGCAAGCTTT GCCTGTTCAA GGACCAAAA GAAGGCCAGT GTGCTGAC CATACTAAGC ACAGAGGAAA  
ACACTGTTAT ATGCTGAGAT TGAATTATA AGTAGAGCCA GATAATATAG TCTCTATAG GTCATAATAA GGCAACCAGA  
TTTTATTCCA AGAGGATTTA AAAATCACTG GAGGTTTTGC ACTAGGGTGA GAGGTGTGAT TTGTATTTT AAAAGATAAT  
TCTGGAGAAT TAACTATAAT GAGGTAGGAG TAACTAAGT TAGGGGCTAT TTCAGTGGCT CAGACAAGAG ATAATGGTAG  
CTTAGACTAG GATAGTAGTC GTAGAAATAA ATAAAGTGG CACTCTACTT TGGGGGTAGA GTCTATAATA GGTTTGGTTT  
ATGGATCATA TATGAGAGTA AAAAAAGAA AATAAATTA TAATGGTTCC TAGGTTTGA CCTGAGCAAC TGAATAAATG  
GGTGCTGTGA ATTGAGATAA AGGAGATTGA GAATCACAGG CTTTGTTTT CAAATTAATT TTGAGAGGCT TATTAGACAT  
CCCAGTGGAG ATTTCAAGTG AGTGAGAGCC ATTTGAAAGT AAGGGACAGG GTCAGGTGTG TAGGTCAGG CCTGTGATCC  
CAGGACTTTG GAAGGCCAAG GCAGACAGAT CAGTTGAGCT CAGGAGTTTG AGACCAGCCT GGGCAACATG GGAACCCCT  
GTCTCTACA AATATGCAAA ATATTACCTG GGCATGGTG CATATGACTG TGGTCCAAGC CACTTGGGG GCTGAGATGG  
GAGGATCACT TGAGTACAGG AGGCGGAGGT TGCAGTGAGC CAAGATCTCG CACTGCAAA CCAGCTTAGG TGACAGAGTG  
AGAACCCTGTC TCAATAAATA AATAAGAAAC GTAAGGGAAA AGGAAATTA TCTGATCATT GGCAATGCA TAGTATTTAA  
AGCCAGGGGA GTAGATGAGA TACTCAAAGT AGGTGAAGAT AAGGAGCCAA TGAAGGCCA GGACTCTGGT GTACATTTAG  
ATGGTTATAA GAGGAATAGA AACTGGCAA ATAAGTAACA CTGAGCACC AATGAGGTGG AGAGGAAAGC CAGGAGATGA  
AGCATCATAG AAGGCAAGAG AAGAAGGGTG TCAAGAGGC GAGGCAGTCA TCAACTCTG GGCAGTCAA TAATATAAGG  
ACAGAAAAGT GACCATTGGA TTTGAAATA TGATGAGCAC TTTGAGTGA GTTTGAGAC AGAAGACCAA TTAGAGTAGA



TTGAGGAGAT AACGAGAAAT GAGAAATGT AACCTGCAAG CACAGACAAT TCTTGAGAGA CTTTCTGTG AAAGGAAACA  
GACACAGAGT CTTAGCATGT CTGTCTTTC TATGGGAAAT GTAAATAGTT TGAGATCAGG GATAGTATTT TATTCTGCTT  
TTTGTACCTC TACATTACCT AGCATAGAGC TAGCTAATGT GCACCTAAGT ATGTTCTCAA TTCTTATCGC CTGAATGACT  
GGATGGGTGA AAGAATGGAT GGATGGATGG ATGGATGGAT GGAAGGATGG ATGGATGGAT GGAAGACTTC TGATTGGCCA  
AGAAGAGGAT ACTGGTAGCA GAAATAAAAA CAGCACTGGA GAAAGAAGAG TTTAGATTTT TATTCTTTGG TGTCAGTTAG  
ACAGGAAAGT AAGACATTAG AAGAGTCCTT AGATAATTTA TGTAATTGTT CACTTAGGAT TTTTAAATGT GATCACTGAT  
ATTGGACATG TTCCTAGTGA AGCATTITTT GTGTTTCACT GGTGAAGTT AATAACTGTA AAATTATTTT CCGTTCAGGA  
CAGAAAAACA GAAAACTTGA AGCTCCTATT AGAAAGTTCA AGATTCTCTG GGGTCTTCTG GATTTACTGT TCCCAAACT  
CTGTCAAGAA CAAGAAAATG ACCTGTATAC TTAAGTGGT TAGGCAACAG TGGAAAGACA ATTCTCAGAG AAGATTGTGT  
TTAAGAAGAC ACTTTCCATA GGAATCAAAAC AATAGCTTTC AGTGACTAAC ATGGTAAGAC ACAGGGTGT AGCTCTTTC  
TTCCAACCTC ATGGCTGTG TACCTTACCT TTCGACCCCG TGTTCTGAA ATTGTTAAAT TCATAAACTT ACCAAGGACT  
AACCAGCCTC TGGGGAATTG CTGTATACCT AGCAAACTTA CAATGGACAT ATTTATAAGC CATAAATGATA ACTGACTAAT  
AGGAAATACC CTCAACTGAA AATGAGAGAT CATCATTTGC AAATGAGTTC CCTTGCCAG GCAACTACTG GGGAAATGT  
CATGCAAGCA AAATTAATCT TTGAAATCCT CTTTTCAT TTTTGTGTC TTCCTTTCC ATAGGCACCA GAAATATCAT  
GGTGCCTGGA TCTCATCTCT ACAGAAAAAA AAAGTGATTT GATAAACTGA TTATATTGT GTCCAAATGT GATTGTATTT  
TCAAAGATAA CCTAAGGGGA GAATGCTGTC TGGCCCAACA GCAGGCTCTC GACTTCATTT CAGACACTGT GGCCAATGGC  
TGGGAAACAG GTATGAACAG TAGGTTTCTG AGTCCCCTGG AATTATTCCA TTTATGTAGC CACCTCCATG ACAGGAAGCC  
TCCCTACTCT TACTTCCAG TTTGTTTCACT CATTGGCACA GGTTGAGAT TAAAATTTGC TCAGTGACCT TTTATCTAAT  
AATGTGTTAC CTTCTTCTCT TAAAAAGTAC AAGGGACAAA TGCTCATGGT ATACTTTTAG GAGATTGTGG CTCTCTATTA  
ACAGTATTTA TTCAACAAAC ATTTATTGAG CATTATATG TGCATCATGC TAGGGACTGG AACCTAGTAA GTGTAGCACA  
TATTATTTCA TTAAATCCTC ACAACAAACC CATGAGGTTG GTTTTATGAT CCCAATTTT CAGAAGAAGA AACTGATATT  
CAGAACCAGT TAACTAAGT GTTCAAGGTC ATGCAATTTT TAAGATACAG AACCAAGAGT CAAAGACATG ATTTTAAACC  
AAAGCTTTT CTGCTACTCC ACATTGCTTC CTTAGGTGAG ATCTGAGGCA TTCCGCGAAA AGAGAAGGGT CATAAAGCCA  
AGGGAAGACA AGCTTAGGAA AAAAAAGGGA AATGCTCTAA ATAAACAGCT TTCCTATTTA CCAGAAACCA CTAGTTTAAA  
AATATAATGG GAAAAATCCT ATTCATCTTA ACAATGTATA AAAAAAAGAA GATAGAAGAA ACATAGGGAT AAATTTAAAC  
CATTGTAGG ATATGTAAAG AACTAAAAAG ATGTTAATAA TGGCCTAAAG AAAAAAAGAC TTACATGTAT GGGGAGATAG  
ACCATCTTAC TGGATTCTAA TATTAAATAG TCTAGGTGTT CCATTCTCA CCAATTAAT GTATACATTT AATACAATGT  
CAAACGAAAT ATCTTAGGAA TTGCTTACAA ATTGTCAGAT AATTACAAAG TTTACCTGGG AAATATAAGC ATATATGAAG  
AGTGAATGGG ACCCCACCAC TCCCCCAAA ACAAAAAAGG TCTGAAAAGG ACAGAAATCA AGGAGAGTCT TGCCCTGCCAG  
ATACAAAAAT CTATTATAAA GGTGTATTGA TGAAACAAT TTAATCTAG TGTAGCAATA GGCAGCAAG CATGAAACA  
GCATAAAAG ACAGAACTA TACCTAATTA TGATGAAGAT TTAAGGTATG ATAAACATGA CATAAATCAA ATCAGCAGAA  
ATTGGCATAG ATAGGGTTAA GACAAATAGC TAATCATTAG AGGGGAGGAA GGAAGGAGG GAGGATAAAA TTAGGTCTCT  
GCCTTCTACT TACATTAAAA TAAATCCAG ATGTATTACA TTTAAATTTT TTTAAAAAA GAAACCACAA AATACTTGAA  
GAAAAATATA GTTGTATAT AGTCTTTTGA TGGGAATTTT TTTTCTTTC AGAGACAGGG TCTGTCTCTG TCACCTAGCC  
TAGAGTGCAA TGGCATGATC ATGGCTCACT GCAGCCTTGA ACTCTGGGC TCAAGTGATC CTCCAGCTC AGCCCCCAG  
GTAGCAGGAA CTACAGGCAT GCGACACCC ATCCAACCTA TTTTCTTTT TTTGTAGAGA CAGGGGTCTT GCTTTGTTT  
CCAGGCTTAT CTGAACCTC TGCCTTCAAG CACTCAGCC TCCCAAGAG CTGGGCTGAT GGGACATTTT TCACTAGT  
GCCACATTAC CATAAATGAA AAGCTTGTA AATACTAATT TTTAAAACTA ATATATATCA GAAATTTTAA TAAACAAAGT  
TAAAAAGCAA ACACAAAAAA TTTGTAGCAC TTATGACAAA TATATGTATA TATATGAATA CAAAAAGAGC CTTTACAAAA  
CAGTAAGAAA ACAATGAATA CTCCAATGG AGTATTCAAA ACTAACTGC TAAAAGCAAT TCAAAACAAA AAACATAAAC  
TATGCATATA TGTATGTGAA AAAGTTTAA CTTATCAAAAG AAGTAACTC TCAAAGAAAT AAACATCAA TAAGGAAATA  
GCCTTTTCCC ACAAATAACC AAAATCTGTA AGAATACTGA GCTGCGAATG TTTCAAGAAA AAAAAAAT CATACACCTA  
TTTCGGAGTG TAATTAATAT AGATCAGAAC ACTTTAAAAA TATTATAGG CCAGGCACCG TGGCTCATGC CATAATCCC  
AGCATTTTGG GAGGCCAAGG CGGGTGGATC ACCTGAAGTC AGGAGTTTGA GACCATCTG ACCAACATGG TGAACCCCTG  
TCTCTACTAA AAATACAAAA ACTAGCCAGG CATGTTGGCG TATGCTGGTA ATCTGGCTA CTCGGGAGGC TGAGGCAGGA  
GAATTGCTTG AACCCAGGAG GTGGAGGTTG CAGTGAGCTG ACATTGTGCC ACTGTACTCC AGCCTGGGCA ACAAGAGCAA  
AACTCTGTCT CAAAAAATAA TAATAAATAA AAATAAATA TTTATATACT CTGACCCATC AATTGTGCTA GCATAATTAG  
GCATGTGTAC AAGGGTTTAC ACACAAGAAT GCCTATTGCA ATATTGCTTT TAATGCTAAA AAAAAATTGGG GAAAAATGCTT  
TAAAAATATA GATTAAGACT GTACATTGTG GTACAGTCAT ATAACATAA GTATACAGCT ATTATTATT TTCAGCCACT  
GTCCAAAAATA TAGCCTGGCC TAACAACATT CTGTTAGGAT AGCAAGCAC CGTGAGGAGA TCAGTATAA AGTATCAGTG  
TTTCACACCA CTGCTCCTTT GCTAATAACC TTCAATGGCT TTTAAGAAG TAAAAACAA AGGCAAAAT CTTAGTCAG  
CCCTTAAGAC TCTCTGTTAC TTAGCTCAAA CTACCCTTT CAACAACACT GCCCTAACCA GGATGAGTTT TTTGCCCCC  
TGGAGTACAT TCAGCCTTTC CTTATCAAAAC CTTCTTTAA ATAAGTATCT TCTCCAGGAC CACTTCATT TCTTCCCAA  
TTTAGCATT TCTATATCTC CAGGCCTACC TCTATAAAGC CTGTCCTAAC CACTCAAACC CTAGCTTTT CTCTGAACCTG  
CTAGAAATAT TTTTCTCTCA TTGGCCATTT AGGTAAAAAG GTTTTACTG TTTATTACCT ACTCAATAA AATTCTCTTT  
TTTTGAGACA AGGTCTTACT CTGTCGCTA GAATGGGGG AAGTGGGTG ATCACAACCT ACTGACGCTT CTACCTCCA  
GCTCAACAGT CCTCCACCT CAGCCTAGTG AGTAGCTGTG ACTACAGGCA TGTGCCACCA TACCCCACTA CTTTTCATT  
TTTATTTTT GTGAGATGGA ATCTCACTAT GTTACCCAGG CTGGTCTGCT GATCTCAATT GATCCTCCA CTGTGGCCTC  
CCAAATGCT GGGATTACAG GCATGAGCCA CAATATCTGG CCCAGTAAG CTTTAAAGG CATTAACATG AGGAACAGTG  
TTCTTACAC TATTTTATCA GCTAGGGCTT TGCAATGGAGT AGGAGTTTAA TAAATGCGGT TGATGGGTTA ATCAATGTGT  
GAAAAATATC AGAGCCACCA AAAACAGATA TTATGTCTAT TCTCATCAAC AATCAAAAT GAGTAAACAG CCATTTTCTA  
ATACAGGAAA CCACAAAAACA TTGAATGGTG ACATTAAGAA ATCTCCCGAG CAGGAGCCAA CCAATTTTTT CATCTGATC  
CAAGTTAGCA AACTGCAAAA GATAGGAAGC ACTAATGAGT GGAAATTGTA GTAGAAGCAT TTCTTATGAA GGCTGTCTTG  
ACTGGATCAC ATTTTATTG CTGTTGGAGG TGCCAAATGT GTGTGTTTAT GCTAATCTC CACCTCAGGC AACACACAGT  
CAAGGATCCT ACCAAGTGT ACCGTCAAGT GTCTGTTGGC AGCTCAAGGC CCCAGCGTTG TTCCCTTGCA CTAGGGAAAA  
GACATATTCC AGGTACAAGT ACTCCACTT TGATGCTACA GAGGAGTGC TGAACCTTGT GTCATTAATC TCTCTCGTT  
AGATCCCAAC CTGTTTAAA TCCCACTATC TGCTACTCT GGGTCTTAC CAATTTACTA GATCATAGTT GGAGAAAAATC  
TACAAAGCCT TGCTCCCTT AGATTAAAC AGGTCTCCGT TAAATTTAG AATTGCTAAC TTCAAGCGG CCCTTATGCG  
ACAGTATGCC TGTCAGTCAT ACTACATTTC CTAATTCCA TTCATGTGAC TGCTCCATAC CTTCCCTCT CTCTCATAC



TACTATTATC TCTTCCCCC TCCTCATTT TTAAGTGATG ATCTTGTTTC CTATTTCTCT GAGAAAATAG AAGCCATCAA  
AAGAGAGTTT CCACAACTC CTACTGCCTT ATCTAGCCCT GTACCATATA CTTTGCATT CTCTCATT CCATGGATGT  
ACTGCCTATC TGTGCTCTA TCTAAGGCTA ACCCTTCCAC TTCAGTTTTG AATATTATCA GCTCTTACCA ACTCAAGGCC  
ATTGCTCTAG CAATTCTCTC ATTCTCTCTC ATTTTCTTCC ATCAAGTTTT CTTTTTCTTC AATTAACAGA GTAGCTCCTA  
AAGGGAAAAA AAAGTCTTCT TTTCAATGC TCATCATCAG TGGCCATCAG AGAAATGCAA ATCAAAACCA CAATGAGATA  
TCATCTCACA CCAGTTAGAA TGGCAATCAT TAAAAAGTCA GGAAACAACA GGTGCTGGAG AGGACCTGGA GAAATAGGAA  
CACTTTTACA CTGTTGGTGG GACTGTAAAC TAGTTCAACC ATTGTGGAAG ACAGTGTGGC GATTCTCTAG GAATCTAGAA  
TTAGAAATAC CATTGACCC AGCCATCCCA TTAAGTGGTA TATACCCAAA GGATTATAAA CAATGCTGCT ATAAAGACAC  
ATGCACACGT ATGTTTATTG TGGCACTACT CACAATAGCA AAGACTTGGG ACCAACCCAA ACGTCCAACA ATGATAGACT  
GGATTAAGAA AATGTGGCAC ATATACACCA TGAATACTA TGCAGCCATA AAAAAATGATG AGTTTCATGTC CTTTGTAGGG  
ACATGGAGGA AGCTGGAAAC CATCACTCTC AGCAAACTAT CACAAGGACA AAAAAACCAA CACTGCATGT TCTACTCAT  
AGGTGGGAAT TGAACATGA GAACACTTGG ACACAGGAAG GGAAACATCA CCACTGGGG CTTGTTTGGG GATGAGGGGA  
GTGGGGAGGG ATAGCATTAG GAGATATACC TAATGTAAA TGATGAGTTA ATGGGTGCA CACACCAACA TAGCATAGTA  
ATACATATGT AACAACTG CAGGTTGTGC ACATGTACCC TAAACTTAA AGTATAATAA AAAAAATATAT ATATATATAT  
AAAACAACTA AAAATAAATC TTTTCTTCT GCAGGATCAG TCCATCACC CACACACAGG CTGTGTTTGA TGTGTTCCC  
CAGCTTAAGA GATCGTTCTC CAGATCCAC TGCTCCTTCC AGTTGTACC TCAGTTCTCC ACTTCTTTT GCTGATAAAC  
TACTTAACT AGTTACATAT GATTCTGTG CCCAGGTCCT CTCCTCTTCT TTTAGATGG AGTCTACTC TGTCACCTAG GCTGGAGTGC  
TCATTTTAC TCTAATTGCA CAACCAAAAA CTCCTTTTTT TTTAGATGG AGTCTACTC TGTCACCTAG GCTGGAGTGC  
AGTGGCATGA TCTCGGCTCA CTCCAACCTC CGCTCACGG GTTCAAGTGA TCCCCCTGCC TTAGCTCTCT GATGAGTGG  
GATTATACAC ATGCACCACC ACACCTGGCT AATTGCTTTG TTTTGTGTTG TGTGTGTGTG TGTTTTTTTT TTTTTTGGG  
CAGAGTCTCA CTCTGTGGC CAGGCTAGAC TGCACTGGCA TGATCTCAGC TCACTGCAAC CTCCACCTCC TGGGTCAAG  
CGATTCTCT GCCTCAGCCT CCCGAGTAGC TGGGACTACA GGCATGCACC ACCATGCCAG GCTAATTTTT TGTATTTTC  
AGTAGAGACC AGGTTTACC ATGTTGGTCA GGCTGGTCTT GAATCCTGA CCTCAAATGA TCTGCGCACC TGGACCTCCC  
AAAGTGCTGG GATTACAGAC TTGAGCTACT CGCCCGGCTT ATTTTGTGT TTAGTAAAG ACGGGGTTTC ACCATGTTGT  
CCAGGCTGGT CTCAAACCTC TGACCTCAAG TGATCCGCTC GCCTCAGGCC CTCAAAGTGC TGGGATACCA GAGTGAAGCC  
ACCATGCCCTG GCCATAAAC TGCCCTTTGT TAATATGACT GTTGGCTGC ACATTGTCAA ATCCAGTGGC ATTCTCTTA  
CTCGGCAAC CTACGGCATT TGACACTGTC TGTCTTCTC TCTGTCTCTC TATCTGTTT CAGTATACTG GCCTGGCTTT  
CTTTTACCT CTTTATATG CTCTCCAGT CTCAGGCTCC TTTGGGGATT TGAAGGTATG TTGCATTTT CTATTCAATG  
AATAATGACA AGAATGATC ACTTAAGACA TTAAGTGGT AGTTCCTTTA CTAGGATAAA AATAATTTT TCCCCACAT  
GGGGCATATT CCATTTCCAG TCTGACTGT CTGTGTAAT TTTGATTCTC TTGGCAGCCC CTTTATATC AGTTCATCTA  
CTGTGCAGGA AATTGGACAA ACATTTGCAC TGGTATAACC AAATACAGTT GAACCTTTGG CTGACTCTT AGTGAACCTC  
ACCAAAAAATA ATTTCTGTAA GAGACTGAGA CGTCTACGAG TAGGTTTTTC AGAATTAGTA AACATAAATC AAGGATACAC  
AGGTAGATT GAATTTTACA TAAACAACAA ATACTTTTT AGTATGTCTA CTGAAATATT TGTATCTTAT CTGGCAATTC  
TACCTGGTAC AGAATAATC CATTCTCTT AAAGATCTT ACTCTGTAAT AAGTTCTTTG GTGATGGAAG GGAGGTATTT  
CTGTAATTAG AGTCACTGTC TTCTCCAG TTTTATATC TGGCCAGAT CTGCAATGAA CACACGACAG AATCCAGGGG  
GGATGAAGAT GGGTGCTTTG CAGGAAAAAA AATTAATAAA ACTGAAAAA AGCTTTTGA CTAAAAAAT GTGATCTAAA  
AAAGAAAGCA GGAGAACTTT CTGTCTGCAC TTTACATCAG AACCACTTG GCGTCTAGAA GCTGTGCCCT TGGGAGTG  
GTGGTGCTTG GTAAGAGATG CCAGGACCAG TGGTACCCAC TGGGAGCACT GCCAATACCC AGCAAGGAGC ATGGGTGCAC  
AGTAAGGCAT TGCACTGTGA TTCAGCATAA AATAACAATA AGGGAACGTC ACGGAGAAAA GGCCAGACTT CTTTGTGTTA  
GAATGTGGGA AATGTCTTCT GAAAAATGGT AGTAAAAAAG CATGCTTGA TGGTCCACTC CAGGCAAAAC TGACTAATCG  
GGGTACAGG ATACAACCC TGCACTCAT TTTGTTTCT GTTGGGCTGA CATGAGGTTT ACTGTGACCA CTGTGTTTTA  
ACCCCATAGT CTCTTGAAA TACAGCCAGG TCAAGAGAGC TCCACATAAA ACATAATCAA AAAAAATAAC TCAAGTTTCC  
ACTGATCAGC TTTTACAAC TCTTATCCTT TCACTAAGT TGGAGCAAGA TTTGAGAATT GGATGGCTAT TTGAGGCTA  
TTTCTGCGCT TTAGTTCAAT GTTTGTTCT TCTTTATTA GAGAACTATG GTTTTTTATT ATATTTACAC TTTAAGTTCT  
AGGTACATG TGCAACAGT GCAGATTGT TACACAGGTA TAAATGTGCC ATGTTGGTTT GCTGCACCCA TCACTCGTC  
ATTACATTA GGTATTTCT CTAATGCTAT CCTCCCCCA GTCCCCCACC CCCCAGACAG CCTGGGTGTG TGATGTTCC  
CTTCTGTGT CCAAGTGTTC TGTATATGT ATAGATTAG TTTATTGATT TGTGTATGT GAACCAGCCT TGCATCAGAG  
TCACTTGCTT ACAAGAAACA AACACTTCA AGATGGATCA TTATGTGTA TAAGTGAAT CCAAGGATTT ATGCTCAGAG  
GTGGGCTTAA CAGGTAGGAA GAGCAGTATT TTCTTCAAC CATGAGTGTG TGCAGGTTT TCTTTCTTT TTTGATAGG  
AGTCTCACTC TTTTACCCAG GCTGGCGCGC AGTGGTGCGA TCTTGGCTCA CTGTAACCTC TGCCACCTGG GTTCAAGCAA  
TTCTCTGCC TCAGCTCCC AAGTGGCTGG GATTACAGG ACCTGCCACT GTCTCCGCT AATTTTTGTC TTTTATAGT  
AGATGGGGTT TCACATCTT GGCCAGCCT GTCTTGAAC CTGACCTCA TGAATCATCC TTCTCAGCCT CCAAGTGC  
TGGGATTACA GGCATGAGCC ACTGCGCCCA GCCACAGGT TTTTCAAAGA CTAACTTAA AAAAAAATAA AAAATTTCCC  
AATGAAATAT AAAACTAAAG TGCTAAACTG TGATAGACTG TTTTCAAAGA ATGCCAGTT TCACAAGTGT CTATAGAACA  
TGTAATTTAG ATAGGTAAGA TGAATTTTGT ATAATTTTGT ATGGCAAAAT TAAACAGGTA TACAACAAAA ATAAATTTCT  
AAGCCCTCA ACCAAGTGA TGGACTCCT CTCTCAGCA AAGGAATACC AAAGTAAACC TGAATAAATA GTTTGGCCA  
GGATTGGGGG TAGGTGGGGG AAGCCCAACA TGAATCATT TTTCTCTCT CTTTGGAAAT TCAGGCACAA CTGAATGTCA  
GCATTGACAC TAAACACAG ATCTTAAGAC TGACAAGCCA GACTCTTGT AGCAGAGAGC CAGGCCCTGG AAGAAATCAA  
GTTATTTTAT CCAAAAAAT ATTTCTTTGA TATATTTTCA AATGGCCCTG CAAAGCTGTC TCTGTGGGG AAAATTGACA  
TGCTGTACAG AATTTCTTCT TCTTTCAAG TTTTATCTGA TCCAGGAGAG ATTTAACTAA GAGGCTAGCA TGTTTTTTT  
TTTTTTTTTT TGAGGCGGAG TCTGTCTCTG TTGCCAGGC TGGAGTGCAG TGGCGTATC TCAGTCACT GCAACCTCG  
CCTCCCGGT TCAAGCGATT CTCTGCCTC AGCTTCCGA GTAGCTGGGA TTACAGATCC ATGCCACTAT GCCAGCTAA  
TTTTGTIATT TTTGTAGAG ACAGGGTTT ACCATGTTG CCAGGCTAGT ATTGAACCTC TGACCTCGTG ATCCGCCAC  
CTCGGCTCC CAAAGTGCTG GCATTACAGG CGTGAGCCAC CGTGCCAGC ACAAGACATT TACCGTCTAT TCTCTGTAA  
GCTACTATCT AGAGGCTTCA TCAACATAAT AAGACCTTG GTCTCCACAA CTCCTATCT TATCCTATTA GTTCTACTG  
ATCCAGGTC TTAGATAAT AACAACTCT TCAACCAAT GCAATCAGA AAGTCTTTGA ATCCACCTAT GACTTAAAG  
CCCCACTCT TCAAGTTAT CCGCCTTCT GACTGCAACC AATGTACACC TTATATGTGT TGATGGATAT CTGCTGTAA  
CTTCCATTCC CTAATAATGT ATAACATCAA GCTGTAACCC AACCACCTTG GGCACATGT TTAGGAACT CATGAGACTG  
TGTGTCAGAC CTGCTCACT CATATTTGGC TCACAGTAA CTTCTTTAAA TATTGTATAG AGTTTGGCTT TTTTATTGA

CACAGGAAAA ATAAAGAATT GGAAGGTCTT TCATCAGTCA CTGAGCCAGC TTCATATCTG ACTGAGGTCA TACAGTTCAG  
TGATTTGTAG CTTTGCTACT TAGATTGCTA TCCATTATCT AGAAGCATCA GGATCACGTG GGACCTATTG GAAATGCAGA  
CTTTCCTCT AGAAGCCAGG ACCTTGAAT ATTCTTGCA CATAGTAGGT GCTCAATACA TATTGAACTC CTAGGTGCAA  
TTCATTAATT CATGAATTA TGAATTAACA CGCTCTCAAA GTTTAGTGCT TTTTCACAGA CTAGTCTTTC TGCCTCTTAA  
GCACTCAGCT CACCACGCTT CCAGTCTCAC TCCCCTATTA GTCTGATTAA AATCTGCTTA CATGTGAGTC TGAGATCAAG  
TGTTATCTCT TCTGAGAAGT CTTCCTCAC TGGCCCAAG GAATTTCTCC TCTATTTTAG CACTGTCCCA GTTGACTTGT  
CATTATCTA GCTTTTTCA TATTAGTTGT TTTTCATATA TATGTTATTA AGGAACTAG TCATTTCCCC TAATAGAACA  
AAATTGCTGG CCTTTGGGGT TGGCAATGGA GGGGAGGCTC TTCTTGAAAA GGGGAAGAG TGTTCTCTTA ATATTTTCT  
TACGAGATT ATGTTGCTCA TCTTAGCCT TTAGTCCCCC ATTGCCTGCC TACAGTTGGC AGAGACCATC TGTTCTCTCA  
CTGTCAGGAA CTGCTCAAT TCTGAAGTT CAGAGTCAAA AAAGAAGCAA GTTTCCCTAG CTCTTTGATC AACTTTCAAA  
GTTTTACTTC CATTGAAAA TTTACTAAGT CACCAGGAGA TGGTTTATAC TGAGAAATAT CCACTCATAC TCTTCTCTT  
CAACTTCTT CCATATACAC CCTATTACAG GGATATAGT TTTACTATA GCTCAAAAGG ATGACCCTAT CAGAACCTG  
CACAGTATGT AAAACATTCT CACCAGAGGT TCACTTGTGT ATTTCCACC TAGAATGGA GCTCTAGAAA AGCAGCAAT  
GTATCATTTT AACTTTAGAT TCTATTTTCA CCCCCAGTGC TTGACACATG ATTTGAAGTT AATATTTATT TATCAAGTGA  
TTGTTTTAAA ATCATGACTC ACTCAACAAA GTTATAAGAA TAAGAATAGT GTTACAGAAT TGGTATACAC AAGCTGACCA  
TAATCAACAC ACCTATTATC ATTTTTTTC GACAGGTCTT CGCTGTCTCA CCTGGGCTGG AGTGGAGTGG CATGACCAG  
GTTCACTGCA GGTGTAAGT TCCAGGCTCA AGCAATCCTC CCACCTCAGC CTCCACATA GCTGAGCCCA CAGGTGTGTG  
CCACCATGTC CAGCTAATCT TTTAATTTCT TGTAGAGACA GGGTCACCCT ATGTTGCCCA AGCTGGTCTT GAACTCCTTG  
GCTAGAGAGA TCTCCCTCC AAGGTCCCTC AAAATGCTGG GATCTCAGG AAGAGCCACC ATGCTGTGCT ATAATCAATA  
CACTTTTAAG AATGCTAGAA TGTATATCA GATGATACT TCAGCACTAT CTCAAGCAA CTGGGGTGTG GGTATTCTA  
CATATAAAGT TCAGCAGTGT TGTCCACAG TCCCAAACTC CAACTGAGGT CAAATGTAGG GTGCAGCAAG GTCAGTGGG  
CTGTCATCAA GGGCTCTCC TTGCACTCTT GCCAACCTG TTTCTTGATT GTCTCTACCA CCATGAGTCA CCAGCAATCT  
CCCACAGTCA CTGTTTTAAA AGTTCACAAG TATTGTGTA ATTGCAGGCA ACCCTTGAC TCCCTGATTG CCTGGTCTTC  
TTCCTGGGC TCTACCATTT TTTTCCCCA GCACTCTTTC TGCTGCTCTA AATTTAATT CATGCAATTC CATATGTGT  
TCTATCATCT TCTCATCTC TTTCTCTCC CTTCATCCA ATTTGTTTG TCTGTTGCT TGCTGCTGCT TCTTAATACA  
TTTCTCTTT TCTGAGAAGG CTGAGTCCA AAATCTCAG TTACTGTGTTG TTTCTGTTCC CGTTAGTTAA TCTCCGAACC  
TTCATAAATT AAATCTGACA AAGTCCCTG ACTAACAAG GAAATGCACA AGTCACAGTA AAAGGGGCAC ACACAGAACA  
CAAATAGACC CAGGGTCTT TCTGTTTATC ACTCAGCTTT TTATAGGAGA TCCAGGAGAA ATGAAGTGA AAGGGAAGTG  
TGTTGAGTTA CTATACAA CAAGAGTAAA CTTCCTATA AGTGGTAATT TTTTTTACA GGAATAATTG AAAATGGAAA  
TTACCTTCTC TACTCATAGT AAGTACTCAG TGGTCTTGT AGGGATGAG AATGTGTTG AGCTTTAGTG TAAGGCAGAA  
TTCTGTTAG TCTGCCAGTA TGGAGAAAA ATAAACACA AAGGAGCTGA CATGTAGGAA GTGGCAGCTG GGAGGGTCTC  
AATTCTCTT ATTACAAAA TGCCCCAGAG AAAATAAAG CTGTGTACA TGTGAGATG GGAGAGTTCT CTGGCCCCC  
TCGCAGGATG TGTGACAGTG GGTGGCTCT CTGCTGCGC ACCATGAGCT CAAACCCCTC ATAGGAGGGG GAGCACACAG  
GCAGGAAGGT GCAGGAGCTG GCGAGCTCT TGGGCTCTG GCGCGTGGT ACTGTCTAGA GGTGGGTGCC TGCAACTCT  
GAAAGCCCAA GTGGGCATGT GTTACAGTGC ACTTTTTCAG CTGTGCTGC TGCAGCTTAA GCGTAAACCA GCTCAGTTT  
TTCTTGGTAC CCAGGTCTT GTCTGGCATC CAGGAAGAAT CAGGTACAC ATGGACTTGA AGGATGAATG TGGGAGTTT  
ATGGAGTGGT GGAGGTGGCT CTCAGTGGGA TGGATGGGA GCTGGAAGG GGATGGAGT GGAAGATGAT ATTTCTCTGG  
AGTTTGGCTG TCCAGCAGC GATCTCTCT CAGTCTGCC CAGCCTCTC GACGTTACA TGTCTCTCT CTCTCTCTCT  
CTGCCATGCT GTTCTGCCG TCATCTGCT GTCTCTCTT GGAGCTGGA ATTTGGGTT TATATGGTAC ACAATAAGGG  
GCATGGCAGG CCAAAAGGGA ACTTTTAGG TGCAAAAAC AGGAATGCTT CTCTCACTT AGGGCTATAG ATTTTCAGGC  
TTGAAGGTGG GGCTTTACC AGCGAACCTG TATTCCTG TCTCTGTG ATATCAATGT AATCAAATAC TGGGCTGATC  
CAGGATGTT CTTTAGACCA ATTAGGGTA AAATAATTTA CATTACAGGT TTATATTTG CTTTTGTCT TCTTTTAA  
GCAATCATGT AAAATATCTA TACGACAGTA ATAGATGATA GCGAACCTAA TAAATTAAG CAGAACTTA AGAATCTCTA  
ATGATTTCAA CTGTAACTAA GGTATTTCT CTATTGTTG ACAAATGTTG GGAGATAAG CACAAGAGT TCTGAAGTAT  
TTCAGAAAA CAAAGAGGGA GGTATATAA ATAATATTT TTTCTACTT TGGGAAAATG AAAGCTAGTC ACAAAGTTAA  
ACGAGTGGT ATTTAATAT TAAATACA GGCTTGGATG TATTTCTGT TAAAGAAAAT AAAATGCAGA ATATTCAAAA  
CGTCTGACCA CCTTCTAAG AAAATGCATC TCTGAGGTAT TTTCTTAG AAGTTATTGT AAAATCCTG GAGAAGCTTG  
AACACAGCAA AGCAACAGG ATGCAGAGT TAATCTGTG AAAGCTTAGG GAAGAAAAG AAATCATTA AAATAGGTCT  
TCTCTGAAG ATTTTAAAA CGCAAAGAGG GTGAATAGC AATGATAATA AAAAGCTGG CATAGAGAGT GGCACAATTT  
GCTGTGCCAC TGAGCTGACT GGATGTGTTT GAATTTCTA GGCATTAGT TACCTTTCCA CACGATTCT CTTTAAAA  
AAAATGCCCA CACTGAAAT ACTTTTTCA TGCAATTTA AATAAGCGCA CCATCTAGT TACAGAAAT CACTAGAAGT  
TATTTATCT AAAATAGCAG AGATCTAGAA GAATTTGAG CTCTAGGACA TTTAGACAC ACAGAAAGAA GAATCTGGAC  
AAGTCTTGAC CAGACATGAC AGAATAGAAA TTTCTTTCC TATTTATCT TTTGAATAAA ATTTTCAGGA TCTTACAGT  
GACAAGTTG TTATCTACAC ATTGTGAAGC ACATTGATT CTCTCTGTA GCCTTAGGAA GATCTGAGAG GTGACTGAGC  
TGATTGAATG ATCCGTGACC GCTCTACTGG GACCAGTAGT AGAATTTTAC TGGTGGAGAC CTGCTGGAGG TTTGAGAGCA  
GACTTTGAAA ATTACTAGAG CTACACAGAT ACTGTGCGT TAATCTGATT ATGTTTAGAG GCTTTCAGAA CTATGCTGCT  
GCTGCTGAG TGATGACAGG ACGCAGAG ACGATCTAAG GCTCTGAAT GGGCGGATAG GGACAGATT CAGCAGCCAT  
CTGACTTCAG TGCTCATTTT GATGCTTTCC CTGCAAGGTG CAGTGTGAG TGTGAGTGT GCAGTGGTGG GAGGCTCACA  
CAGGAATACT TGCTTCTGTA GCCCTAATTT CCGGTTCAAA CTCTGCATTC ACCTGACAG ATTCTTTCT TGGCCAAAAT  
TTAGTTAGGC TTCTGGGCTT TCTCTATGC CCACCTGCAG ACTTTTGGT AAAATCCAGT TTTAGTAAAG AGCTCTGCTA  
AGTCAGTTTA GCAAGAATCC CCACCTCAAA AGTCACTATC TCCCTCCCTG GTAGTGTCTG GCTTGTCTTC AGCGAGAATT  
CTATTAGGT CTGTTAGATT AGAATCCTCC TTACCTTGA TGCTCTCTCT TAGTATTTT TCATCCACTG ACTCCTTGAC  
CCACCTTGCT CCTGGCTAT AAATCCCAC TTGCCATAC TCTGCAGTTA AGACTATTT CTCCCACTA CTGCAAAATC  
CCATTGCCAT GGTCCCTATA CTATCTCAAT GGTAAATGAAT AAAGTCTGCC TTACCATGCT TTAACAAGTA ACATTGAACC  
ATTTTTTCT TTAACAATCT GCTGCACAAT GAGATTACTA AAATTTATT CCATTTGCC ATGCTGGATG TCCTCAATGG  
AATGGCTCT GTGAGACCA AATCATTGTG AGAAGGAAAA CCCATCTCT ACAGCCCCCT GTAACGTGAT GTATGTTACA  
TGTGATGAT GTTACATAGT TTTTTTCAAT GTTGATCACT TTTGCCCAT TTCTATAT CTTATCAGTT GGAAGACTGT  
GGAAGTTGT AGTACTAAGC CACAAGATGA CTAAGAAGAG TTGAAAGGGC AAGTGGGGCT AAAACAGAT TTTGTTGAC  
TTACCCACC ATTCCCCTA TCATGGGGCT GAATCTGCTT GGAGGAAGGA GCATCTTTAT CTTGTACTG TGAACCACAC

AGTCTAGCAG CAGCACAGCC AAGGCACTTG GGGTTTCATG AGACTAAGTA CATGCAATTC TATTGTAAAG GCTTAAAAATA  
TATACAACCTG ACCCTTGAAC AACATGAATT TGAATTGCAT GGTCAAGTAT ACGCAGATTT TCTTCCACCT CTGCCACCCC  
TGAGACAGTA AGATCAATCA ATCCTCTTCC TCTACTCTCT CAGTCTACTC AAAGATACTT GAAGTCTACT TGAAGATGAC  
AAGCACAAG ACATTTATGA TGATCCACTT CCACCTAGTG AATAGTAAAT ATGTTTTCTC TTCTCTCTAA TTTTAAACA  
CTTTCTTCTC TCTAGCTTAA TTTATTGTTA AGAATAAAT CTATAATACA TATGACATAC AAAATATGTC TTAGTTGACT  
GTTTATGTTA TCTGTAAGGC TTCAGGTCAA GAGTATGCTA TTAGTGGTTA AGTTTTCCAG GAGTCAAAAG GTGTATGTGG  
ACTTTCAACT GCAGGGGGGT GGGCACCCCT GCCCCATGT TGTTCAGGG TCAACTTTAC TGCCAAAGGC AAGCCTTTAC  
ATCCACTTTT TCCATCCCAT CAGTAAATGG AAAAAGATAG CTACAGTATC CCTGCGTCAA ATCTTTTTTT TTGCAGATCA  
CAAAATGGCC ACTCACCTTG CTCTGTGAGG GGTAAAATGC CCCACTTTCT TTAGTAATAT TTAAGTTAGA TAATATTTAA  
GTTATAAAGT TGTTCTTTGT AATCGTTAAT TGTAATTTT ACATAGTTTC TTTCAAACAG AAATAGCATT TTTGTTAGAT  
AACCTCCCGT ATAGATGATG AAACCTCTTT TAAGGGCTAT CTGAATTTTA ATTCCTTGAA AAGGCAGAAA TTGGTAGCT  
AGTAGTCATA AATGTACTGT GGCTTCCCC AACCATCTGG GCTATATAGA AGCTGCATCC TTGGACTGCA GTAGAGGAGT  
CTTACAAAGC ACAGAGCAAC TTCTCTCTG GGTGCGCTA GTTATGATGG CAATTTTAAA TGTGTACTTT TACCCAAAGA  
AAATCCTTAT TATCAACAAT CACAATGCCA TCATAACCAT GGTATAAAAA ATTCAAAATG TCCCAGCTGA AGTGGAGGCA  
AAGACTCAAG TTCATGGAGT CAGAGTTTCC TTGCTATTCC TCTTTTTCAA ATGACCATTT AGTAAGCACC TGAAGAAAAAT  
ACTATGGACG GCATTGAAAA GTGAAGATAG GTTAACTCT CTCGAAAATC TAATTCTCCA GATGAAACGC TGACACTTAT  
CCACCCACCA GACCTATAG CAGATGTGTC ATGGCCATC ACATTTGACA CAGAGAAGTC ATAACCTAGT CAGCACAGAG  
ACATTTCCAT GAGTTTCTGA ACCATGGACA GAACGTGCTC TGTGGGACAT GAAAACCTGA ACTTAGAGGA CAGGCACATC  
TGAGAAATGG GCAGTTTAAA GGCAGAACAT AGCACATATG TGAAGGGTT TTAGAAGCAA ATTTACAAGA CGCACTCTTC  
TTCATCTTAA ATAATCTGCA ACCAAAGCTT CCAAAAAAGA CAATTTAGGA ATGCAGAGGT GAGGAGTAGG GAGGGGAATG  
GGATGAGAGA GAGTGGAGAT TAATGGTGGG CAGAGCGAGG TTAGAACTT AGTGGTTTCT TCAGGTTCTG AACTGAAATT  
TGTACTGT AAAGGCACAA ACACCATTTT TAACAAAAGT GAGCAGGACT TCCTATCTGG TTCAGAAAAAT AGGTGAATAA  
ATAGTACGAA TTATTAAAA TAATAATTC CACTTATACA TAGGAAACTT GATAGGAACC ATGATAAATG CTAACTCTT  
AATCTTCAAG GAACTCTGCT AGGGATATAA TATTATAAT CTGTTTTGC AGATGGAGAA ATTGAATTTT AACCAAGTT  
ATCATAACCC TTAATGATT AAATGATACT GTTACATGAG AAAGCTGCGT ATCTGTTTCC TGGATTGTGA GCCATAATTT  
GTGTCTCAAG TCCCTTTTGC TGCCAGCTAT CTGGGTAGG TGTGTCCCT TTGGGCTGTT TGATACCCCT ACATTTATCT  
TTTTTTTTT TCTTTTTTTG TTGAGAGAGT CTTCCTCTGT TGCCTAGGCT GGAGGGCAAT GGCGCGATCT CGGCTCACTG  
CAACCTCCCG CTCTGGGTT CAAGTGCTTC TCACGATCT CTGTGCCAG CCTCTCTAAT AGCTCGGATT ACTGGCATGC  
ACCACACAGC CCACCTAATT TTGTATTTT AGTAGACAAG GGGTTTCTCC ATGTTGGTCA GGGTGGTCTC AAACCTCTGA  
CCTCAGGTGA TCTGCCTGCC TTGGCCTCCC AAAGTGCTGG GATTACAGGT GTGAGCCACC ATGCTGTGCC CCAAATTTAT  
CTTAAATGCC CCAAATTATC TAGTTCCCAT GACTGGGCTT CTGCTTTGAT CCTTTCTGCA CTGTCTGGAC CCTCTCCCTG  
GGAAATGAGA TTGTGTCCTG AGCCCTAGT TAGAGGCTAT GTCTCTGCTG TTCTGAAATG GGCTCTCTGG ATGAGACCTC  
ATTAAGAGTC TAATTCTCTT GGAGAATTGA GAGATACCTA TTGTCTCAA AATCATTGAA ACCAATTAAT GTATTATGAG  
CCTCTATCCA GTGATTGTA CCTCAATTCC CCAATCCAGC TGTCAGGGCC AATTTGTCT ACCTTACCTA GTAGGTAAGT  
CTGGAATTGT AGCTTTGGCA TTTTCAGTA TGGTACTCTA GGTTAGCAGT CCCCACCTT TTTGGCACC GGGACCAATT  
TTGTGGAAGA CAATTTTTTCC ATGAAGGGCT GGGCAGGGGA GTGGTTTTCAG GATGAAACTG TTCCACCTCA CATTGACAGG  
CATTAGATTC TCACAAGGAG TCGCAAGCT AGATCCCTCA CACATGCAGT TCACAATAGG GTGTGCACTC CCATGAGAAT  
CTAACACCGC TGCTGATCTG ACAGGAGACA GAGCTCAGGC AGTAATACTC ATTTGCCTAC CGCTCACCTC CTGCCGTGCA  
GCTCAGTTCC TAACAGGCCA CGGACCAGTA CTGGTCCACG GCGCAGGCAT CAGGGACCCC TGTGCTAGG TATAAGCATC  
TGGCTGTGC ATGTCTTCTG TGTAGCTACA TCTGTATGTG TATCTGATGA GATATAAATT ATTTGATTAT AAATTACTTT  
CTTCATATTA GAGTTGTGAA TGAGTATCAC ATATAATTAT ACATAAACTA GGAATATGCT TTTAATAAT GTATATAAGT  
AAGTTTCTT AACTATGACT TTCATCTTAG CGTAGTAAGA GGGTGCTAAG AAATATTGT GATGAAAAATA GGCATTGGTA  
GAGTTGAGAC CACTGGGTGA TGAAAGAGTG TAAAGATTTT AAAGCCTTCA GATGCTGGTT CAAGGTGAGA AATGTGATTG  
GGAGCAAATC AATTAACCTT TTGAAGTCTT ATAGGGCAGT TATGAATACT TAATGTAAAC ATATGTAAAG CTCTTCTGCC  
CTGTATACAG TAAATGCTAG TTAGCTATTA TGATCACTAC TAAATGGGG ATGACATAAA CCTCATAAGG TTTAAGTAT  
TATGCAAGAT ACTATACAAA GTCCAGTAAA TATCACATTC AATTGAATCC ATGATGTCCG ATTATTTTAT CTACTTCAA  
GAGAGAAAAA AATGCTGTCA GTTTACTGT TCTTATAGAG AGCAAGGCAG ATCCCAATT CCAATGTGGT AACGTGAAAA  
TTTTTGCAAT TGAATCAACA AAACACTTTC TCTTTCTT CTAATATT AACAACCTGT AAGTCTATAC TCCCCAAAT  
CTGGAATTCT CTTTCTTAT TCTTTTCT CTTACCAAGA CCGCAGGATC TTTACTTGG CTATAAGGGG TAAACCTCAA  
GTAGTACAAG TTCTCTGTAT TACTTTTATA CTCTGTCACA GATTCCCTTT GTTCTCTCAT CTCCATGTGA ATTTAGTTAA  
ATTCTCAGCA TTCTGATCCT TACTATACAA GGTAAATGAA TATAAAAAACA AAACGAAACA AAAACCTCTT CCTATTTACA  
TAAGGCCCCA ACCTAATATT TAGTGATATA TATTAATGTG AACAAGGAAC TAACGAAGAC TGGGAAGAAA TTCACAGACT  
TGAGAGAAGA AATGGCAGGA TTCTCTGGGA ACAATTTTCA GTAACGTCAA AGGTGGTAAA AGGTCAAATA GAATGAAGAT  
GGAGAATACC GGATTTTCTT ACAAATGAT TTCCAGGAG ATCTCATCAA ATGCACGAGG ATACCTTCTC AGTTTCACT  
AGTGAGTAAA AGACTGGTAA CATAGCTCAC TTACAATTTG GATAAACAAA ACTAAACAAA CAACATCAA ATTTAGAAAA  
AAATAATAGC AAAACAGAAA TCAACACTC AAATTTTGG TCTTCTGTT TATTTCAATT TGGATACTCA GTGAATGTTA  
ATTAACCAGG AAACCTAAAA GTTATTTC AAATGAACCT CTCAATCTT TCATCAATTA TTTGAGTAT TCTGGTCTTA  
AAAACATCTC TTTCTTCTAC AAACCTCTGA AAGAGATGAA CACCTCCACC TACACCAAAA TAATGTGCTT TGCTGGCCAA  
AAGTACACGT CCATTTTAC TTAACAGTCT AAGGAAAGTC TGGTGCAAT TACTATAATA ATCTGGGTTG TAAATGGTTT  
CTGAGGTAG AATGAGATCA TATTTTACAA AAAGTTTTC ACTACTAGT ACAAGCTTAC AAAACAGCA CCACTACCA  
GAAAAAATC GGCATTTATA TAGTTGTGTT ACTTTTGGTT TCTGCACTT TTTACATCT GGCTCATTTA CATCTTTTCT  
TTCATCTTCC AAAGTGGAGT TAGCTACTAC ATTAGGTAAG GTTACTTCAT CAATCACCAT ACTGTTATAA TCTTGAAAGT  
GAATTTCTT GGACCCTCCC TTGAATGCAG TTATACCTAG TAAACCTGAT CCACAACCA GATCCAAGAC TTTTTCCTCA  
GCAATTTTCA CTTTGGCCTT TGTGAAATAA GCCAGGAGGT CAAAGGTACA TTCCAGATT TTAAGCCTC CCTCATAAAC  
ACCTGTAATC AGATCAGAGT GAGAAGAAAA GCTTTTGTAA ACTATGTTT CTCCAGGGAA GTTCTCTTC AACAAGATGG  
TTTCACTAC TGATAACTTA ACATGCTGGA AACCTGGTAA TGTTTCTATG ACTTTATTT CTAACTCTT CTTAAATCT  
TTAGGCATAG CATGCTCTT GGCAGCTCT AAGGAGGCT GTTTTCCATG TGGCTCCAAG TTCTTGAAC TCTGGCTGC  
ACTGAGTGA CTGTCTGTGT CTTGAGAGGG AGCTGCATTT TCCATTGACT TATGTTCCCA CAAGTGATCC TGAGGCAAGT  
CAAATGTTC TGCAGAACAT TTTCTGTCCC TCTCTCTCC TTTTGTACTT TCTGAGACTG ACAGCTCTT TGAGGAATCC

AGGGTCAAAG CTCATCTCT AATGGGTGTT AATTCATTTT CCAGATGGTC TTCTATAGTG AAATTAAGT GAAAGGTCAT  
CCTCTTATTA AATGCACACA ATCTTTAAAT TCAGATTCTT CAACTTCTGG ATAGAATTG ATGATACACA CAAATCTGCC  
TCAATTATTC AATTAGTTTT GTTGGGCCCA ATTTCTCTTT AGCAGCTTAT ACATGGTAAC AAATATTTAG AGATATTTCC  
AAATGACTTT TTAGACGTCT TTGGTCTCT TTCCAAGCAG CTCTGGAAAG AAAAAAAAAA AAAAAAGAAA GAAAAATGATG  
ATTAAAGCAA AATGGACAT TTTACTAAAG TGTAATATTA AACAGCCACC CCCACCCCTC CTGTCCCCAC CATACAGCTG  
CTTTTTCTTA AAAAGTTGTG GGAAGAGAG AGAGATAAGA GATTTGGACA CTCATACACA CCTTAAGGGT TCCAAAGTTGG  
GAGAAGAAAA TCAACTATAA AAACAAACAG AAGAACAACA GCAACCACCA CCACTACCAC CTGGACAAAC ATAAAGTCCA  
AGATATTCAG ACAGGACAGC CTAGCTACTT GCTGTCTTTC AGCTGTCTTG ATTTGTGTCC AACCATATTC ACCCCCTAAG  
CTTCCAGAAT AACTTCACCT CTGTCTTTTA CAGAAGAGGT GCAGTATTTT ATTTGTGTAA GTCAGCGTCC CTTAAAAAAC  
ATGCATAGGT ATGGCCTGGT GTGTGTAAAT TCATCCAAGA CTTCACCTCA AACATTAGT CGAGAACAGC AGCCCTAAGT  
GTATAGAAGT GGGGGTAATT TGGCAATAAT TAGTAAAGAC TAATTCCGGT GCAGAGCAAA CGCAAACTAG GGCACCTGCA  
TAGTTTGGAG AGACCTGTAG AAATAAGAAG CAACTTTATT GAGAATCTTC TATCTACTGC GTAGACACT ATACCATTCTG  
CCTCAATTTT CACAGTTCTG GCAAGTGGGA CTTTGTCTTC CTTTATACAA GATTTACAAT TTGGGGGAGA GCGGGGTAC  
CCAGTCCCGC GGCTAGGAAC GCGCTCTTT CTCTCCCAT CACGTGCAA GGCTTGGAGT CACTTCCGGC TGCAGGTCCC  
GGAACAAATC CGACCCAGA AGTGGGGACT TCTGGCCCTC ACCTCCCAT TTGAATGTAA TGTTACAGT GATCCAGACC  
TGGGGATGCT TGCTTCCCGA CGTGTCTGG GATCGCGCTT CTGAAAAAGC TCACCTACA ACGCTCTCTC CGGACCTAAA  
TCGCGCACCA GTGAGTCGAG TCCTCCAGGG GCTAGAGAAG CCCGACTTTC TTTCCGGCT TGAGGGACCC GGGCTACCA  
AGAAACCAGC CGCCCTCTC TCTATGGTTT TGGAGCCGGC GGAGAGCGCG CAAGGGTTGG GGGGACTGCG AGTTTCCGGT  
CTGGGCTTTG GCGGGTCTGG TTTGAAGCTC TCCTGTTTGA CGAAAGTATG TCTCAGGAAG GTTCGGTCCC AGCTAGCCGC  
GTTCCCTGG AAGAATTAAG TAGCTGGCCA GAGGAGCTAT GCCGCCGGA ACTGCCGTCC GTCTGCCCTC GACTCTCAT  
ATCCTTCTT GGTGTCACT TCTACCTAGA GAAGGGTGTG GCGGGTCCG GAACCTTTCT CTCTGTCCC TTCAGACCCA  
CCGCCAGGT GGTATATAT ACCGCGGCT GAACCCCTC TTTCTTTGT CAGTGAGTGG GATGAAAAGT GAGGGACTGG  
AGGGGAAGCG ACAACCGTGG TAGATTAAAG TAAGGCTTTG GCCCTGAAA GCCTCGCGGA CGTGTCTGA CCAAGGTTT  
TAGCAGTGA TGTGGCGTTT TCTTCCATTC CTCTTTTCA TTTTCTGTA CTCGTGCTT GCAATTAAGT GTAATACTT  
TTGTAGTGG ATAATGGGG AGGCAAGGAC TGAGACCTGC GGTATGACGA TAGCTCTGGC CTTAATAGT TTGAGGTAAA  
GCGAGATACT CTAGCTTTT GTCTCCCGTA AAAAGGGTGG TGAATATGAA TAAGGGCTTT CTAGCGTTA TAAGAATTAA  
AGGGCATAGT TCTGTGGTGT GAAATCTTTA AAAGATGTTT AGTAAATAAA AATGATTTT CTCTTCCC TCTCAGACCT  
CTTTTCTT TTTCTTCTT TTTTTTGAC AAGTCTCACC TCCTCTCACC CAGGCTGGAG TCTTCTGAA AGAGTCTTC  
CGCTGTGTG TGGCTTCAA CTGTGGATT TGAGGCGCTT AGCGCTTCT TCGTCCGGT GCAGCACATT CTGTATGGT  
CTCATGCCT TGTGGTTGTA AATGTGCCTG GAATCTAGC CTTTCATGGT AAACCATATG TATATGTATC TTTTTCACAA  
CATTTGAGCC CAGCTTTATA CAATTACAT CAAAAGAAAA AAAGTAACCT TCACTGAGA GAATCTCAAT ACTGCACAAA  
TATTTGTCAG CTAAGCCCT ATGTAATCAC ATAGAAGTCA TTAACCTAGG CATTAGCAAA ATCTCAGAAG GTGCCAAAGC  
CCCTTTTTT AGTTTTTGTG TAGGTACAGA ACTGCCGTCT TCAAGGAGTT TCAACTGAA AACAAATAGC CACCCTCAA  
ACATTCAAAA ACCTTAAAC TCGTGCATA ATGTGTGTA GACATGGTGT TAGGCTTGG GAGAACAGAG ACACGGAACG  
TGATTCCTCT TCTTCCAC AAGCTTATAG AGAGACTTCA TTAAGTTGAA AGTCAACAT CCCACCTAGC TTTGCACTT  
AAACGACATA TTCAAAAAAG CCAAACTTC CTCTAGTTT CTTCATCTGA GTAAATGGT TCACAACTG AAACCTTGAA  
TCCTCTCTG CTCACACACC CGATCAGTAA GTTCTATTG TTTCTATCC AAACATATG TTGAATCAAT CCGTTTATCT  
CCATCTCAT TGTACCCT CTGATTCAC ACCCTTATCA CCTCTACTT GGAGTATTA TAGTTTCTT GTTTCTACTC  
ATAATTCATT ATTCAAAAA AGTTAAGAGG GAAAAACAT AGATCTCGTC ATTTCCCTT TAAACCACT TTACCTTCAA  
GGTTCAGGT GATCTAAGCC TTGCCCTTCT CTCATACCTA GTTAATTAAC TACACTCTGT TCATGAATAC ATTAGGCTCA  
CCTACCTCAA GATCTTTTGT CTCAGCCTGA TTGTCTCT CAGCCTTTG CATATTCAT GTTATGTCT TGGCCCAAT  
GTCATCTCT TAGAGGGCT TTTTCAGAGC CTTCATCTT AGGCAGTTC CCAACGCA GTCTTACAT TGTATCACAT  
TGGCCTGTT AGTTTTCTAA AAAGCACAT ACCATAAAA GAAATGCTCT TGTGTCTT GTATATTTT CACTTCTACA  
CATTATGTTG CAAAGTTTCA AAAGGAGGA TGTGATTTT CTTACAGCG TTACCCTCAG CACTAGAAC AGTGCCTGAC  
ACATAGTAAG CATTCAATTA AGGGCTAAAA ATATTTCTAG TTTTAAAAAT ACTTGGGAGT CTAATTAGAC AATACTTTT  
TTCAGCTTA TGGTAGTATT TTAGCTTCA TATTTAACA AATGAAAAAT TTGCAATAA TCTACAATGC CATTACCCC  
CAAAATCTT TCAATGTTT GCATTTTACG TATTATTTT CAGGCTTAC CTGCATGTCT GCATAATCAT AACTGACTAA  
TTTTGGAACA GCTGGTAATT ATTTGAGCTT TACTGAAAT TTTTCATGAG GCCAATCTA CCTACTGAA CTCAAATTTG  
AGTTAATGAT GACCTCATTT TGATTGCTGC TGTAATAAAT AAGATTTCGG AAGAGGAATG AATTTCTGTA TTACTGTGGT  
AGGACTATGG GTTTTTTTT GTTTGTTGT TGTGTTGAG ACCGTCTC ACCCTGTAC CCAGCTGGA GTGAGTGGT  
GCGATCTCAG CTCACAGCAG CCAGGTCAA GTGATTCTC TCCCTCAGCC TCCGAGTAG CTGAGATTAC AGGCACGTGC  
CACCATGCC GGCTAATTTT TTGTATCTT AGTAGAGATG GTTTCACCAT GTTGGCCAG CTGGTCTCGA ACTCCTGACC  
TCGTGATCCG CTGCCTCAG CCTCCCAAAG TGCTGGGACT ACAGGCGTGA GCCACCGTGC CCGGCCGGT TATTCATTT  
TCTTATTAAC ATCTTTGAT GATCTTATG GTGTTGTIAC AGTAAACAT TCTAACAAT TATCTAACA ATTATCTTG  
ATGGTGATA TGAAGAATTT ATTGTCGTGT ATTGTAAGC TGCTATGTG AGAAGAATTT CAGTCAAATA AAGTTGGTAA  
GATAGGTATG TAAGTAATAT GAAAAAGAT AGAAGGTGAT GAGTGACTTA GGTATAAAT AAGTACAATA GAAATGTTGA  
GGAAGAAAA ATTTCTTGA ATAGAAATCG GAAGTACAAA CTGGGCATGG TGGTGTGCAT CTCTAATCCC AGCTCCTGA  
GAGGCTGGTA TGGGAGGATC ACTTTAGCCC AGGAGCTTGA GGCTGCAGTG AGGTGTGATC ATGTCACCGC ACTCCATCT  
GGGTGACAGC AAGACCGTCT CTCTTTTTT TTTTTTTGA GACGGAGTCT CGCCTATGCT GGAGTGCAAT GCGCGATCT  
TGGCTCACTG CAACCTCTGC CTCCAGTTT CAAGTGATT TCCTGCCCTA GCCTCTGAG CAGCTGGGAT TACAGGTGTG  
CGCCACCATG CCCAGCTAAT TATTTGTAT TTTAAGTAGA GACGGTTCT CACCATACTG GCCAGGCTGG TCTTCAACTC  
CTGACCTCT GTTCCGCCCT CTAGGTCTCC CAAAGTGCTG GGATTACAGG TGTGAGCCAC CCCACTTGGC CCGGAGCGAG  
ACCCTCTCT TAAAAAAA TAAATAAATA AATCATAAAC CTGTGGATTA TTGTAGCATT GTTCTCATC TGTCAAAAAT  
ATTTCACTG TATGCATAGT TTGAAAAAGC AAGTTTGTCC CTGGCAATT TTCAAAATAT TCTTTAATG TGTTTTCA  
ATACTGTTA CTAATAAAT CTAAAGTTT TAAAGCAAA ATTAAGCCAG TAATTTGAGT CCAATTCCAA TCTCTTATGA  
GTCATTGCTT AAATTTCAAA AGGGTTTTAT TTTTTTTTA GGTTGTCTT GAGTAATGAA TACCTATTA CTATGACT  
AGTATCTTC TTAATTATCC TACTCATTGT CTAACATTC TGACAGTTGG ATTGAGCATA TTCGTAAGTA AAATTTGTTT  
AACTGTATGA TGTACTTTGA TGTTAAGGTC CGAGTCCCA CATACCTCGG TAGATGTGT CTTACAGTTT TGTATCCCT  
TGAATGTAA CTGTTCTCTA TGTACAGCC TTTAAACCT TCAGTTACTT GAAATGAACA AATTCATTCA AATCCAGCA

CTTAAAGTT TAAATTACA TTTTGGATAA ATACCAAAGT GTTTTGTGTA TGATGTATGT ATAAACAAAT TGTAAATATT  
AAACGTTAGT TGTTACGATT AGACCTATAT AAAACATGAT ATGCAGTCTA CTGAATAGCT ATCAGCCTCT AACATGTTTA  
GTGTCATTTA GAAAATGCTT TCTAAATTGC CAAAAGCTGA TTGTCTAGGT GATAACAAAT TTACCATTGG GAGGAAGTTG  
ACTTCTCAT TTTTCATGCT TCATCAGTCT TACTTGATGA GATTCATTCT TCTAGTCAGA AGAGAGTTTA GACTGCTCAG  
TTTACTCATA TTTTGAGTTA GCTTTCTAT TTAGAGTTCA CTGTGTTGTG GAATATTCAT TTATAATTG AATCTACGTT  
GTGTAATGGG ACCTAATTTT TTTTCTCTT GTTTTGTG GAGTCTCGTT TTGTCACCCA GGTGGAGTG CAGTGGCGTG  
ATCTTTGCTC ACTGCAACCT CCACCTTCCA GGTTCAGGTG ATTCTCTGC CTCAGTCTCC CAAGTAGCTG GGATTACAGG  
CATGCTTAC CACGCTGGC TAATTTTTGT ATTTTAGTA GAGATGGGT TTCACCATGT TGGCCAGGCT GGTCTCAAAA  
CTCCTGAGCT CAAGTGATCC TCTGCTTG GCCTCCATAA GTGCTGGGAT TACAGGCGTG AGCCGCTGAG CCTGGCCCCA  
GAGTTTGT TGTTTTGT TCAAGACAAG ATCTCACTCT ATTGCCAGG CTGGAGAGCA GTAGTGCGAT CATAGCTCAC  
TGCAGCCTGA ACTCCTGGGT TCAAGCTATT CTCTGCGCT CATCTCTAA AGTGCTGTGA TTACAGGTT GAGCCATGAT  
GCTTGGCCTG TGTTTTGT TGTTTTGT GGGGGAGCG GTCTGCTTT GTACCAAAA CTGAGGTGTA GTGGTGCGAA  
CATAGCTAGC TCACTGCAGC CTCCATCTCC CACGCTCAAG CAATCCTCTC ACCTCAGCCT TCCAAGTAGC TGAGACCGCA  
GGTGCGTGT ACCATGCGTG GCTAATTTT TATTTATATA TTTATTTTT GGTAGACATG AGGTCTGTG ATGTTTCCCA  
GGTGGTCTT AACTCCTGGG CTCAGACAGT CCTCCGCT CAGCCACCA AAGTGTTGGG ATTACAGGCG TGAGCCACCA  
TGCGTGGCAT AATTTTTT AAGTAAATTA TTTTTTATC TTGAGTATAG AAGTGATTCA TGTTCATTGT GGAAAATATG  
AAACATATAG AAAAACAGAA AAGATTACAA AACATCTAAT CTGAAATGGT TAAGATTTG ATGAGAACAG TCTCATCTCA  
TTCCGTATA TTCTGCCAG CCTATCCAT ATTCTCGTA CATGTTATC TACATTAATA TTGGTGTAT ATTTTGGAAA  
CTTTTGT TAACTACATTG TGAACATTTT TCATGTTTA AAATGTCATT TTAATGATGG CAGATCCTAT TCAATAGATG  
TACACACACC TATTTAATG GTCCACAATT GTTGGATATG TAGGTCGTTT CTTTCTCTC TTTTTTTTT TTTTGGCTA  
CTACTTAATA GTTCTCTGT ATAGAATGTG GTATTTTGA AGTGATCAA GCTTAGATT GGTAGATTTC TTGCATTTAA  
TAAAGGGCAG TGGCCTTGT TGAAGTACAT GACAATATT TTATAAAAT TGTATTGTC TTTACAGAAA TTTTGAATAT  
TATTGTAGAA ATGTTTTTAC CTCATATGAA CCACCTGACA TTGGAACAGA CTTCCTTTT ACAAGTTTA CCAAAGGTAT  
AATACTATTA CTGAAAAATA CATGTTATAA GGAATCTAGC CTCATGTTA GATGATTTAT TATTAATTAT GGCTCTCTT  
TTCTAATATA TCAATATAT TCAAAATAAA AATAAGGAGT AAGTAGATCT CATGTGAGAC TATAATGGTG TTAGTGTAT  
CATTAGGCAG TAAAAAATG TTACAGGCTG GGCACGGTG CTCATGCTG TAATCCAGC TCTCTGAGAG GCTGAGGTGG  
GCAGATCATC TGAGGTGAGG AGTTCGAGAC CACCCATGGT CAACATGATG AAACCTCGT TCTACTAAAA GTACAAAAAA  
TTAGCTGGAG ATGGTGGCAG GTGCTGTAA TCCAGCTCA TTGGGAGACT GAGACAGGAG AATTGCTTGA GCCTGGGAGG  
CGGAGGTGCG ATTAGTCAA GATCGTGCCA TTGACTCCA GCCTGGGCAA TAAGAGCGAT GCTCCGCTC AAAAAAAA  
AAAAAATAA AAGAACTTAT ATTTTCAGAT TGTGTGGTTC CTGTTAAAC TGAATTTAA TTATTGTAT TCAATTTAA  
ATGCTCTGT ATTTAAAGC CACTGTACTC CAGCTGGGT GACAGAGTGA AACCTTAAT TCAAAAAA AAAAAAAA  
AAGAAAAGCT GGAATATTGG CAAAATCAAG TAACTAAGAG AAAACATTAA ATTCACAGAA TACATTATTA CATTTAGAT  
ATATATGGTA TATGTTTCT CTGAAAAGCA CAAGCATACC TTTTGTGT TAAATGGAGG GAACATAAGA TACTTTGGTG  
CCAAAAAGAA ACATTATTG TAATTAATCT CTATTGAAA TGGGTTTCTA ACTTTAGCTT TGAATCGTAA TCTTTCAAT  
TCTTGATCT CATAGTACT TGATGATCT CTATGAAA TATTCTTAG AATTGTCT TGACCACAG AAAAAAGTCT  
AACTGTTACA TAGATGAAA TGGATGTTGA GTGTTAACAG CCATATGGA AACAGTATT TCTTAGCTA CATTTGATTG  
TTGACTGTG TGCTATTCT ATAATGTTA GGTCAATTA ATTGTTAGAA AGATCCAAGT ATTAAGATCT AGGGTGGCTA  
ACTTTTACA GACAAAAAGC TTGTTGTAA GGTCAATTA TATACCTTA ATTCAGGAAG GTTAGCTGA ATTGGGTCAA  
AAGGAAACTG GTTAGAAAAT AAGTGAGTAG TGAATAGCGG ATTCAGTGA AATTCCTTCC AGAAAAATACC CTGTAAATG  
ACTGTATGAA TGTGGATTCT TCAAGACAGT CAAATTTAT GTGCGAAAGT AATACTTTA TTTTGTGAT CTCTAAAAA  
TGAACTTGA GTGATTTT AAAAATTTG ATGCTATTA ATAGATTCAA ACCATAGAAA TGGAAAAATA ATTTCTGTT  
GGGCTTTT GGGGATTAT TTGTAAAAA TACCTTTCT CTGATTTT TGCTTAATTA GGTACAATTG TTAAGCTAGA  
TGATAGCCTG TGGATGTTAC TAGTGCAAAA TCAAAATTATC GTATTGTGT TTCTCTGTA AGTTTGTCT TGCTTTTCT  
AGTGATTCT CTTATCTCTG TTTATTCTT GATTGTTT TACAGACTGT GAAATTATC GATGACATGA TGTATGAAT  
AACCAGTCAA GCCAGAGGAC TGCAAGCCA AAATTGGAA ATCCAGACCA CTCTAAGGAA TATTTTACA GTAAGTCAA  
TGTATTAGAA AGCAGGAGAG AGAGGGAGCT TAAAGAATGT CAAAATTTT ATACTGATAC TGATTAGCTA TGTATTCTA  
TGAATGGCC TAATGTTGA ATTAATTTA TAGAATTA GACGTGAATA TAGAAACAT AATTCTGAAT AATAAATCT  
TATAAGAAGA GAAGTCATCA AGCTAGCTGA CCTACCTGT ATTTCAAGG ATATGTGTG AACACCTGCC ATGTTTGTG  
AAGTTGTGT TAGTATTCTA AATGGCTAGA CAGTTGTTC AGTATTGTA GTTCTGATAG ACTAAAGTTC TGTGAAAAA  
GGAAGAGACT GTGTTTGT CATTGCTGTA TTGTAGCAC CCAGCATGCT GACTAATACC TTTTCACTGC AAAAAAATA  
TATTCTAAGT GAAATTTCT TCCTATTCA CAGACAATGG TGCAGCTCT AGGAGCTCT ACAGGATGTG TTCAGCATAT  
CTGTGCCACA CAGGAATCCA TCATTTTGA AAATATTGAG AGTCTCCCT CTCAGTCT TCATATAAT AAAAGCAT  
TTGTGCATG TAAGGTGAGT AAAGGTCTAA TTACTTTG AATGGTATAT AATCAATGTG CATAGGGGCT GAGTAAAAA  
ATGTTTGTAT TCTGTTTAC ATTTAGTCT ATATTATGA AATAAATTT TCCATAGAAT AAAGAATG TAAAGTAAATA  
ATTGTTGCAA AAAAGTGGT TTAAGGAAG TCATTAAGG TGGCTTTT GGGTTTTT GTTTATCTT ATTTCCCTC  
TATAAAGAAA GAAGTTTAA GAATTTGTG TGAGACAGAC ACAGGGATCC TGAAATAGT ATGTCATGTT GCATTGACCA  
ATATTCAAT ACCATTATGA TTAGATGCA GAATTCCTT TTATAAGGA AAGTTAATCC TTATTAGTC CATCTCTACA  
TGCCAGAGGT AGCCTTGAGG CAAAAAGCT TGCCTAGAAT TTATGGGTCA CAGACAGTTT TAATATTGCT ATTTGTGGG  
CGAATGAAA TCACTAGTTA ATTAATACCT CTCTTGCTG ATAGGATGCT AAAAATGTCA CGCACCTGGC CTAATGTTAC  
CTTTTGTG TCTGTTTAC GCAAGATCAT GGAAGTCAGA AATAATTTT TATACATGCT TGCATCTCT GAAGCAGCT  
ATATTTAATG GATGTTCACT AAACAATGAA TGAATATGT ATTCAATAAA TTTATGATCT CTAATAGTAT GAATTAAGT  
AAATTTGGCT CTGAGCTTT GATTGTTT TTCTCTCAT TTTATTTATC CGTAATCAGA ATAGTGAATC TGTGATTCT  
GGGTGTTTAC ACCTAGTTT AGACCTTCT CAGGCTCTT TCAAGGAGG CTATTCTCT CAAAAGCAGT TAATGGAAT  
GCTGGACATG GTTGCATGG ACCCTTAGT AGATGACAAT GATGATATT TGAATATGGT AATAGGTGAG TGAAGAAAA  
TTCTGCTTA GTATATGGT ACTATAATC ATGTATCAAT TAAATTTGTC TCAATGATT CATGTTATT TCTTACTAAT  
TATGCATTA AATGATTAA AATCTTACCA AATAATTTT TAATCTGAA ATTTGGAAT TGTAAAAAT ATTTTGGGTA  
CCTAACCTA GATTGCGTA TTAGTTACT GTAAATTTCT CACAATGATT AACTTATATA ACTTATAAT CTCTGAGGT  
GTCCATATTC AGAGACAATA ACTTTCACAT TTTTAAACC ATAAGTATA TTGAGATGCA GTTTATATT CCTCCAGAA  
TACATATAA TACGTGCATA TGTGTATGA AATATGTCTA TTCTCATATA CATATTATA TGAATAACT CATTTTACAT

GTGATGCACT TTATACTAGT TTATTTTTAT TTTATTTTAT TTTTTTGAGA CAGAGTCTCA CTGTGTAGCC CAGGCTGGAG  
TGCAGTGGCA CAATCTCGGC TCACTGCAAC CTCGCTCCC GGACTCAAGC GATTCTCCTG CCTCAGCCTC ATGAGTAGCT  
GGGATTATAG GCGTCCGCCA CCACACCTGG CTAATTTTTG TATTTTTAGT AGAGACAGGG TTTCACCGTG TTGGCCAGGC  
TGGTCTTGAA CTCCTGACCT CAGGTAATCC ACCTGCCTCA GCCTCCCAA GTGCTGGGAT TACAGGCATG AGCCACCGTG  
CCCAGCCAAT ACTAGTTTAT TTTTAAAGAA TGCTGGTGC TAACACACTT CATTGATTTT ATTCAGTATT AATGGATTAT  
GAACAAGAGT TGA AAAAACA ATATAAAGGC AAAGTTTGCA TTCAAACTT TGGTATAAAG AGAGTAAGTT AAGTTTTGTG  
AGTGTATCAG GCACCTGTTG CTCTGCAACA CACCACCTCA AAATCTATTT ATTCATATT TATTTATTCA TGATTCTGTG  
AGTCTGCAGT TTAGGGTGGG ATGTCTGAG ACACTTTCT CTGATCCACC TGGGGCACTA GCTCACCCTAT GTGACTTCAG  
TGACTTCATT CACATCTGGC TGTGGCAGA GGCAGAAAGT CTTGAGAAAG CCATGTGCAT CATCCAGCAG GTTCACCCTA  
TCTCAGATAC CTGATGCCAG TGGTTTCAGG GTTCTAAGA GTAGCAAAAG TGTGAGCAGG TCGCTGTGTG CTAGCACTTT  
TCAAGTTTCT GCTTGCCTTA ATTTTATTAT TGTCCCCGG GCCACAGCAG GTCATAGCGT TTAGCCCAGA GTCATTGTAG  
AAAAGTGTGG ATTCACAAAAG GGCAGTCATT TGGGCCATTT TTATAAATAA TCTACCACAG ACTGAGATAA AGCCTTGCA  
GAATACCATG GATATTAATT TGAATCTTC CTTTTAGAT TTTCTTCTC TAGCAATTTG TTTTGTCTT TGGATTAGA  
ATTATATCTG TAGAATATT CAGTTATAAT AGGGTACAAC TTTTATTCCA CTGAACATCT TTAGTTTTAT TTAGGTCATC  
TGGTAGGTAT AAACCTCAGA AGTTAATATT CAATATTAT AAAAACCTT AACAAGTGTG ACACCTAAAT AGTTTAAATA  
ATTCCTTTGA CACAACGTG TCCAAGTTGT GTTACGTATT TTAATCAAT CAAATGTTGA AATTGTTTCA TAGATAGTTT  
TAATTATAGG AGAACTCAC CCCCAGACA TTGGGATGTC TTAAGTTTC TGTATCTTT CTGTGAGTTT ATTCATTCTT  
TATTTGATAT CTGCTCTGTT ATTTCCAGTA TGGACCATGC ATTTCTAGCC AATACTTGA AGTTTAAAT TAAGTAAGTT  
TGTTTGTAT TTTTACTTT TTAGAAAATG TTTCCATAT TCCCAATCT TAATTATTCA TGATTCTTTA GATTGCATTT  
AAAACATTTT GTGTGAATTT AATGTTCACT GACACTGCTG TCTGATAATC CAGATATTCT ACATGTAGCT CTCAGGCCAA  
ATTGGACTTC TTTACCCTGT GGCCTCTAAA ATTA AAAAAA ATGTTCTTCC TAGTTAGCTA GACTTCAGA AATAATGGGC  
CATGGGCCAG ACTAGAACTT AACCACCTTT CTCTGTCTAC TGTGTTTAA CCAGCTATCA AGTATCCTAT TTCTAGGATT  
AGATAAATG ATAACATAA TTA AACTGA ATATAATCTT TCCATTAGGT ACTTTTAACT TGTTCACAT TAATTCCTAT  
TGTACAGTAA TTTTAACTTT CTGAACTGA AGCATTTTAA AGGGTACCA GGGATAGTGC CTGTAGCATT CATCAGATT  
TTAGGGGTGA GAGGAGATGT GGTGAGATG TAAAAATGGT TAAGAATATC TACTTTATAC ACATACATAA AACATTAAAG  
GTCAGTGTAT TTTCAGGTCT TAGGTACTTT TCTGTACTA CCAGGACATT AAGTTGCCAT TCAGTGGTTA AGAGTGTGTC  
CTGGGAGCTG TATCAGATGT GCTTAAATCC ATTCTTGAAT TCATTACTC CTCTGAGCC CTGGGCTAT TTGGTTAATT  
TCTCTGAACG TTAGTTTGT CATCTGAAA TGGAAATAAT AATAGCAACT TCTGTACAGG GTTATAGTGA GAATTGAGTT  
CATCACTGTG AAATGCTTAG AAATGTGCAT GACATATAGT TAATACTCAA GGAATTAGCC ACATCACTAT CATCATCACT  
GATTATCTTC CACTCTTACC CTCTCCAGT TCTTTCTG CCGACAGAA TGATCTTTT AAAAGTAAAT CAGATCATGT  
TACTCTATTG CTGGAAGTCT ATCCCATTTG ATTAAGAATA ACAACCTAAT CCTCTGTGGA TGCTGCCTCC TTCACAGCC  
TGCTCATGC TGCTCTCCCT ACTCTTAGTT CCTCAACAT ACCAACTCT CTGTGCCAG AGTCTTTTCG TGGTTTTTCC  
ATCTGCCCTG GATGCTTCTC TCTCTATT TGTGTACCT GCTAATCTCT GCTACTGTC TTTCAGTTCT CAGCTTAAGA  
GTTATATCTT CATGATAACA TTCTTTGATA TCCTTACCCT AAGATTAAGT TAGATTGATA TCCTTACCCT AAGAATAAGT  
TAGATTAGGT CTCTCTATTG TAGCACCTTA GACTCTGTCA TTTGACAAAT CACAGCCCTA ATTAATTATT CTAAAAATTA  
TTTAACATT CTCTCTATG TAGACCACAA GTTTCATGCA GGTAAGGCGG AGATTGTGTC CATTGTTTG ACCCCTTTG  
CTCCAGGGCC TGGTAGAATG CCTCATACAT AGTAAGAATT CAATTAATAT TTTACACAGA GAAAAAATA GCAACTATT  
TAAACAAATA TAACTGCTTC AGAGGTAAAC TGGGCACATC TTAGTTATAT TATGTGATAT ATGATGCTTT TTGATTGTTT  
TTTTAAATGT TCTACAAGGT AGATATTGTT AGAGGTCTTA AGTACTTGA TGTGTTACTT GTGGTGATTG TATCTTTTC  
TTTTATTTCA TTAGGCAGA GCCTTAAAGCA CAGTCCATA ATAAAAAGCC AGTTGAAACA CAAAGATATA ATTAGTAGCT  
TGTGTGAAGA CATTCTTTTC TCCTTCCATT CTGTTTACA GTTAGCTGAG CAGATGACAC AGTCAGATGC ACAGGTAAAA  
TTTGGGCTAA TAGCATTTTA AACAGCAACT CTATTTTCT TTGGCAGTTA GTAAATCTCA TTTGAATGTC TGGGTGCTC  
TATTTAAGAG GATTTTAATT TATTTCAATT GGGTGTTTT TTTGATCTG TGGGATFATT TATATCCCAT AATTACTTTT  
CACCCAGAGC ATTGTATTAG ATTCCTAAT GCTGTCAATG CCTCTGGGT CTGCCTGGCT CCTCTTTGCT TTGGTAACTG  
GTTGGTCACA GCATTCTTCT CAGAATCCTT TCATTCTTT CTGCATGAGA AAAAAATTC TTTGTTTCAT ATTTGTATAA  
GATCTGATAT AGCTGCAATC AATCTTGCAT TTTTCTTCA CCAACGCATT GCGACCTTTA GGGATACAAAG TATGTTTGTG  
CATGTATATG TATGTATCAG TCTTTTAAAT TTGATATAGT CATACATTG TTTTATTTT GAAAAGTTAG AGTGTGTAAT  
TGGTATCCCA TTTATGAAAC ATTATATTCT AAAAATTTGT AGTAGGATTA TTGGGAATTA TAACCTATT TCTGTAAACA  
CTGTATACA TAGTACCTTT TGCTTTACA GAGGCCCTCA ATTTTATTTA ACTATAGTAG TCCTAAATAA TAAGATTAAT  
AGTACTCAGG ACCTAACAGT TATATGTCAT TTGTTTTTT TTTTTTGAG ATGGCGTCTC ACTCTGTCAC CCAAGCTGGA  
GTGCACTGGT ATGACCTTGG CTCACTGCAG CCTCTGCCTC ACGGGTTCAA GGGATCGTTC TGCTTAGCC TCCTGAGTAG  
CTGGGATTAT AGGCGCTGC CACCACGCT GGCTAAATTT TTAGTAGAG ACGGGGTTTC GCCATGTTGG CCAGGCTGGT  
CTCGAACTCC TGACCTCAGG TGGTCCACCC GCCTTGGCT CCAAGTGC TGGGATTACA GGTGTGAGCC ACCGCGCCCA  
GCCTATATGT AATAATTTTA ATGGGACCAT GAATTGAATA TTTCTTCTT GAATAGCAAT GACATAGCCC CTCTATTGT  
ACATCTGCAA GCTGATACAG GGAATTCCTT TGTACTCGC CTTCCTCTG CAGTCAGCT ATGGGGTGA AAGTGAAGG  
GTTATCCAA GTCCTAAAAC TGGTAGCAAC TCCTAGGGCA GGGCTGATCT GGAAGGACAG ACCCTAGGGG AGGGTGAAC  
TTAAAAAGA AGTTCTGAAG GTAGTAAGAA GGAAATGAGG AGTAGTGTTA GGAAGGGGCT AACTTTTTTC TTCTTGCTTC  
TCTTCTTAT CTCACCTGCC CTTCCCTTG TATCCCTCT TCTTTTTCC CTTCCTTTT TTGTCTCAC TTCATTCTG  
CATCTTTCT GATTCCTCTT ACCTTGCTAA AAGGAGAAGT TTGTTTGGG ATCTATATC AATGGCAGGA AGGTTGTTTT  
CTTCTTTAT TTTATCCTAT AGATTATAT TCTCAACACC AACCTCTCC TTTTTCAGT TCCTTCTTGC TTCTTTGAC  
ACCACAGAGT TTGAGCTAG TACTTGAGGA GGAAATTAAC ACAGAGATAC TTGGACCAAG AGTAAGATGA AGAAAGTCA  
AACAACAGTA TAGCTATAG TGGCAAGAGA GAGTATGGG CTGCTTACG CAGGGTGGCT GTACATAAG TATATCTTCA  
GTTTATATA ACTGCTTATA GATGGAAATC AGAAATTTA AATTCTCTTA ACTGTCCAAG AAAATTCTCA TTTTTTCAA  
TTTGGGACTG ATAAATGTGA CCAGTTCTGC TTAAGTCCA TTGCCTGAAA TGGAGCTTTG AGGTGGACTG TATAATTTCT  
TCAATCTTAA CTCCAAATTC TGATCAGCGA CGCCCTCTGC TGTTCATAT TAATATTTAT TTACCAATCA AAGTAAAGTA  
TTGAAGTTTT CTGGCAGTT TTCATTGT GTTTTAGTCC ATTAGGCTG CTATAACAAA ATCCCTTAAA CTGGGTAAAG  
GATTATAAAT ATTAGAAAT TATCTCTCAC AGTTCTGGAA GCTGGGAAGC CCAATATCA GGCACAGTA GATTGGTGT  
CTAACAGGG TGTCCTGCT GCTTCAAAA TGGCCCTTG TTGCTGCATC CTCATTAGT GCAAGGGGCA AGACAGCTCC  
CTTCAACCTC TTTTATAAGG GCATTATGT CATTATGAG GGCAGAGCCC TCATGACTTA ATCACTTCCC CAAAGGCC



ACCTCTTAAT AGTATCACAT TGGGTGTTAG GTGTCTGGGA GGACACCAAT CTTCAAGCCA TATCATCTCA CTTGGAAAAA  
AGTCAAAATA AAACCAGTAG ATTTAATTAA TATTACACTA TTTATAGAAG CATGTGATGT ATCATTCTTT GTATTAATTT  
CCTGGGGTTG CCGTAACAAG TTACCACAAA CTAGGTGGCT TAAACAAATA GAATTTTATT CTCTCACATT TCTAGAGGCA  
GAAGTGCACA GTGTGCAAT AGGGCCATGT TCTCTGGAAG GCTTTAGGGG AGAATATATT TCATATCTTT CTCTTAGCTT  
CTCGGTGTCA CTGGCAATCC TTAGCTTACT TTGGCTTTCT GTGTCTTCAC ATCATCTTTT TATAAGAACA CCAGTGATAG  
TGATTAAGGG CATACCTTAC TTTAATATGA CCTCATCTTA ACTAATTATG TCTTCAATAA CCTATTTC AAATAAGGCC  
ACATTCTGAA GTATTGGGAG TTAGAACTTA AAGCTTTTTG GGAGGGACAC AGTTCAACCC ATAACAACCC CTAATTCGA  
TATTTATTCT CAATTAAGTC TTGAAATTGG TTTCAAAAAG AGAATATTCT ATTAGAGITT TTAATGTATA GTTTTAAACAT  
ATAGTTCTTT AGCCCCAAT TTTTTTTTTT TTTTTTTTTT TTTTTTTTTT TTTTGAGAC GGAGTCTCGC TCTGTCGCCC  
AGGCCGGACT GCGGACTGCA GTGGCGCAAT CTCGGCTCAC TGCAAGCTCC GCTTCCCGG TTCACGCCAT TCCCCTGCCT  
CAGCCTCCCG AGTAGCTGGG ACTACAGGCG CCTGCCACCG CGCCCGGCTA ATTTTTTTGT ATTTTTAGTA GAGACGGGGT  
TTCACCTTGT TAGCCAGGAT GGTCTCGATC TCCTGACCTC ATGATCCACC CGCCTCGGCC TCCCAAAGTG CTGGGATTAC  
AGGCGTGAGC CACCGCGCCC GGCCTGCCCC CAATTATTTA GTTTTCTAT AAACAGGGAA ATTTATTGT GTGGCCCTTA  
GAACTAATTT AATTTCCTCT CTAATTCCTA CTTATGTTTA TATAATGCTT TTAGAAATTT GTATTATTCA GAAAAATAAC  
ATATACTATT GTATCTGTTG CCTACACTTA GATTTTATTG CTGCTATAT TAAATTTTA TTAGTATTTT AATTGTTTAA  
TTAAAGAAAG AATGTGCTG TAATCTCAGC ACTTTTGAGA GGCCAAGGCA GAAGGATTGC TTGAGCCAG AGTTTGAGA  
CCGAGCTGAG CAACACAGGG AGACCCCAT CTCTACAAAA AATAAAAAAA TCTCCAGGC CTCATGGCAC ATACCTGTAG  
TTCTAGTTAC TTGGGAGACT GGGGTGGGAG GATGCATTGA GCCCAGGAGA TTGAGGCTGC AGTGAGCCAT GATCAGGCCA  
CTGTACTCCA GCTTGACAA CAGAGTGAGA GCTTGTCTAG ATAGATAGAT AGATAGATAA TCTAAATAGA TAATAGACAG  
ATTATCTAAA TAGATAATAG ACAGATTATC TAAATAGATA ATAGACAGAT TATCTAAATA GATAATAGAC AGATTATCTA  
AATAGATAAT AGACAGATTA TCTAAATAGA TAATAGACAG ATTATCTATC TAAATAGATA ATAGATTATC TAAATAGATA  
ATAGATAGAT AGATTAGATA GATAGATAGA TAGATAGAGC TTGGACAACA GAGTGAGAGC CTGCTAGAT AGATAGAAAC  
AAAGAAAGAA AGAAAGAAATG GTGCTCATAT TTTAAAGCAT TGAAAAATGG TCTCTTGC TTATATTACC CACACCTTCT  
TTGTGGCAT TAAGATGCAA ACTTTGTTTT AAACAGTTGA GTAAATCAAA GATGGGACTG TTAAGTTATT TGTGTTATTT  
ACCTGCTTTT TGAAATGTA AAAATAAAC TCTAGGTTTA ATTAGTAGTA TGCTATTTAG TAATGAAGTA AAGCTAGAGG  
CTTGAACAA ATCTTGTTGA ATTTCTCTT GAATGAGAGA GAAATTTAA AGTAAGCAA CAAATAAGTT GTGTGTCACC  
ACTCATTGAG TCATTTAACA AGTATTTCCA GAGTACTTAT TCTGTGCCAG GAAATGTTGT AGGTGCCCTC AACAACCTAG  
AGTCTAGCCT GAGACACAAG TAAGTAGGTA ATTATTATAG AATGGTATGA TCTTTGGAGG ACTGGGTATT GGCTGGCTCA  
TGGGAGTACA AGATAGGTAC CCAGTGATGA AGTCAGGAAA GGTTCCTTAT GGTGATATGA TGACGTCTAT GCTGATTATA  
AGGTCAGTGT AGAATAAACT TTGTGCTTTT AAATTTGCAT AGCACTGTAT TAGAGAGTTT ATCTTCAAAA TAATCGAAAA  
GGCTGAGTGT GGTGACCCAT GGCTGTAATC CCAGCACTTT GGGAGGCCGA GGTGGGCAGA TTGCTTGAGC TAGGAGTTCTG  
AGACCAGGCT GGCAACATG GTGAAACCCC GTCTCTACTA AAAATACAAA AATTAGCCAG GAGTGATGGT GCGCACCTGT  
AATGCCAGCT ACTTGGGAGG CTGAGGCAGG AGGATCACTT GAACCCAGGA GGTGGAGGTT GAAGTAAGCC GAGGTGATGC  
CACTGCACTC CAGCTGGGC AACAGAGTGA GACTCCATCT CAAAAAATAA AAAATGATC AAAGAAAGGT GAATTTTCAT  
CTACCTATT TCTGCTAGG AAAATGGACT ATTTTCAAT ATTTTAAATA AGGTCAAAA TGAGGGATC GCATTTTTC  
AAGTTTATG ATTTATTAA CTTGTGGAAC AAAATAAAC CAGTAACAC CACCTCTCAC GCCAAAGCTC ACACCTTCAG  
CCTCAACAT GAAGGTCTCC GCAGCACTTC TGTGGCTGCT GCTCATAGCA GCTGCCCTCA GCGCCAGGG GCTCGCTGGG  
CCAGCTCTG TCCCAACCAC CTGCTGCTT AACCTGGCCA ATAGGAAGAT ACCCTTCAG CGACTAGAGA GCTACAGGAG  
AATCACCAGT GGCAATGTC CCCAGAAAGC TGTGATCTC AAGACCAAAC TGGCCAAGGA TATCTGTGCC GACCCCAAGA  
AGAAGTGGGT GCAGGATTCC ATGAAGTATC TGGACCAAAA ATCTCCAAT CCAAAGCCAT AAATAATCAC CATTTTGA  
ACCAAAACAG AGCCTGAGTG TTGCTAATT TGTTTTCTT TCTTACAATG CATCTGAGG TAACCTCAT ATCAGTCAA  
AGGGCATGGG TTTTATTATA TATATATATA TTTTTTTT AAAAATAAAC GTATTGCATT TAATTTATTG AGGCTTAA  
ACTTATCTC CATGAATATC AGTTATTTT AAAGTGAATA GCTTTGTGCA GATTCTTTAC CCCCTGGGAG CCCCATTCTG  
ATCCCTGTG ACGTGTGGG AATGTTCCCC CTCTCTCTC TTCTCTCTG GAATCTGTG AAGGTCTGG CAAAGATGAT  
CAGTATGAAA ATGTCATTGT TCTGTGAAC CCAAAGTGTG ACTCATTAAA TGGAAGTAAA TGTGTTTTA GGAATAC  
ATGAAGGTCT CCGCAGCACT TCTGTGGCTG CTGCTCATAG CAGCTGCCTT CAGCCCCAG GGGCTCGCTG GGCCAGCTTC  
TGTCCCAAC ACCTGCTGCT TTAACCTGGC CAAATGAAG ATACCTCTC AGCGACTAGA GAGCTACAGG AGAATACCA  
GTGGCAAATG TCCCAGAAA GCTGTGATCT TCAAGACCAA ACTGGCCAAG GATATCTGTG CCGACCCCAA GAAGAAGTGG  
GTGCAGGATT CCATGAAGTA TCTGGACCAA AAATCTCAA CTCCAAGCC ATAA CCACATATTC CCTCTTTT  
CCAAGGCAAG ATCCAGATGG ATTAATAAAT GTACCAAGTC CCTCTACTA GCTTGCTCT CTCTGTTCT GCTTGACTTC  
CTAGGATCTG GAATCTGGTC AGCAATCAGG AATCCCTTCA TCGTGACCCC CGCATGGGCA AAGGCTTCCC TGGATCTCC  
CACACTGTCT GTCCTCTATA AAAGGCAGGC AGATGGGCCA GAGGAGCAGA GAGGCTGAGA CCAACCCAGA AACCAACC  
TCTACGCCA AAGCTCACAC CTTACGCCCT CAACATGAAG GTCTCCGAG CACTTCTGTG GCTGCTGCTC ATAGCAGCTG  
CCTTACGCCC CAGGGGGCTC GCTGGGCCAG GTAAGCCCC CAATCCCTTA CAGGAAAGGT AAGGTAACCA CCTCCAGGT  
ACTAGGTCAG CAAGAATCTT TACAGACTCA CTGCAAAATC TCCATTGAA AAATAGGGAA ACAGGTTTTG TGGGTGGACA  
AGAAATGCTT CAACCGTCAC ATCCAGTCAC TGAAGAGCC AGAAGTAGAA AGCTCCGAG TCTTTTCCCC ACATTCAAGA  
GGGCCCTGG GTGCATCCTT ACCAGCTAT CTTACAGTG TTTGGGAATG GGGAAATGGT CTGTCTTACT GTGGGCATGG  
TGGGCATTTT TGGCAGTGGG AGAGAAGGAA AATCTGTTGA TTAGAAGCTC AGTATGTTAA TTCGACTCCA GGACAGCTTT  
CAGAGACAGT GGCTAAGAGA AGAAGGAGGT CCCAGGGAT CTCTGAGGT GACTTATTT GACACTCTTT GGGAAAGTTA  
TCTAGGAGAT TTGTTCCATA ACTCATTTT CCATCTCTG GTGACAAATT TACTGAGTTT ATCGGTCCCA CTGAGCCAGT  
GCATAGCATG GTAACAAACA GTTCTAAATT ATCAATGACT TAACAGAATT AACTAAATTA ACAAAGTTA CTTTCTACT  
TGTACTAAAT ATCTATAATG TATGGGCTCA GGCTTCTGCA TTTTACTCT AGGATTCTAG ACTGATGGAG AAGTTGCCAT  
GTGGGGGAAC ATTGATGGAT ACTGTGATAA AGCAGAAGAA AGCTCTCAGG AGTCTGTCAT AGGCAATGCA CTGTGGCTCA  
AAAATGACAC CCATCACTTT GTCTCTTCT TATTGATCA AAATAATTA ATGCCTCAA CCAACAAAA GTGGCCAAGA  
AATGCAAGTC TACCTTGTGT CTAAAACAG AGGATGGAGA ATATTTGGTG AAAATTACCA TGACCATCAC ATGGCCACGT  
AGGTCTTTAT AATGACAGAG CTAGCATTTG TCACATTGAC CAAGCTTTGT CCATACACTC TACAGTAATG ATGATCTCT  
AGTGACAGG GGAGGATGCT GAAGACACAG CACAGCATCC TCCAGACACA TAAGACTTCA GAGCAGAGG ATTCCTCTC  
CACCTCTCGC AATTCCTTGC TTTCTCTAA CTTCTTTAC AAAGTCATGC TTGGAAATGT CTATGTATCA TCATGTGGCT  
CATTTTTTTC TCTGTTTATT TTTTTCCCC AAAATTCAGC TTCTGTCCA ACCACCTGCT GCTTAACTT GGCCAATAGG

AAGATACCCC TTCAGCGACT AGAGAGCTAC AGGAGAATCA CCAGTGGCAA ATGTCCCCAG AAAGCTGTGA TGTAAGTAAA  
TAAAGTTCAC CCTCCCCTAG ACAAAAAAAT AATGTCTAGG GCACAGAGTC AAGAACTGTG GGAGTCATAG ACTCTGATAG  
TTTGACCTCT ATGTCCAAT TCATTAATTT TCACAAGTGA GTGTCTACTC CCAGCTCCCT GCCTGGGAGA TTGCTGTAGT  
CATATCAATT TCTTCAAGTC AAGAGCAAAG ATGGTTTTAT TGGGCCTTTA AGAGCAGCAA CTAACCCAAG AGTCTCATCC  
TTCTCTCTCT CCGTAGCAAC CTTTGTCCA GGGCAGAGT GTCTTAAAT ATTTAGGGTC AAATGGGCAG AATTTTCAAA  
AACAACTCCT CCAATTGCAT CCTGATTCTC CCCACAGCTT CAAGACCAAA CTGGCCAAGG ATATCTGTGC CGACCCCAAG  
AAGAAGTGGG TGCAGGATTC CATGAAGTAT CTGGACCAAA AATCTCCAAC TCCAAAGCCA TAAATAATCA CCATTTTTGA  
AACCAACCA GAGCCTGAGT GTTGCTAAT TTGTTTTCCC TTCTTACAAT GCATTCTGAG GTAACCTCAT TATCAGTCCA  
AAGGGCATGG GTTTTATTAT ATATATATAT ATATATTTTT TTTTAAAAAA AAACGTATTG CATTTAATTT ATTGAGGCTT  
TAAAACTTAT CCTCCATGAA TATCAGTTAT TTTTAAACTG TAAAGCTTTG TGCAGATTCT TTACCCCTG GAGGCCCAAA  
TTGATCCCC TGTCAGTGT GGGCAATGTT CCCCTCTCC TCTCTTCTC CTGGAAATCT GTTAAAGGTC CTGGCAAGA  
TGATCAGTAT GAAAAATGTCA TTGTTCTGT GAACCAAAAG TGTGACTCAT TAAATGGAAG TAATGTTGTT TTAGGAATAC  
ATAAAGTATG TGCATATTTT ATTATAGTCA CTAGTTGTAA TTTTTTTGTG GGAAATCCAC ACTGAGCTGA GGGGG  
GCCAGGTGCG TGTTGGTCCA CGCCGCCCGT CGCGCCGCC GCGGCTCAG CGTCCGCCG CGCCATGGGA GGCCGGAGCC  
GAGCCGGGGT CGGGCAGCAG CAGGGACCCC CCAGAGGCGG GGCCTGTGGG ACCGCTATGG GCGTGGAGAT CGAGACCATC  
TCCCCCGGAG ACGGAAGGAC ATTCCCCAAG AAGGGCCAAA CGTGTGTGGT GCACTACACA GGAATGCTCC AAAATGGGAA  
GAAGTTTATG TCATCCAGAG ACAGAAACAA ACCTTTCAAG TTCAGAATTG GCAACAGGA AGTCATCAA GGTTTTGAAG  
AGGGTGCAGC CCAGATGAGC TTGGGGCAGA GGGCGAAGCT GACCTGCACC CCTGATGTGG CATGTGGAGC CACGGGCCAC  
CCCGGTGTCA TCCCTCCAA TGCCACCCTC ATCTTTGACG TGGAGCTGCT CAACTTAGAG TGAAGGCAGG AAGGAATCA  
AGGTGGCTGG AGATGGCTGC TGCTACCCT CAGCCTGC TCTGCCACTG GGACGGCTCC TGCTTTTGGG GCTCTTGATC  
AGTGTGCTAA CCTCACTGCC TCATGGCATC ATCCATTCTC TCTGCCAAG TTGCTCTGTA TGTGTTCTG AGTGTTCATG  
CGAATTCTTG CTGAGGAAA CTTCGGTTGC AGATTGAAGC ATTTCAAGTT GTGCATTTG TGTGATGCAT GTAGTAGCCT  
TTCTGATGA CAGAACACAG ATCTCTGTT CGCAATCT ACATGCCTT ACCTTCACTT AAACACACA CACAAGTGC  
TCAGACATGA AATTACATG GCGTACCGTA CACAGAGGGA CTGAGCCAG TTACCTTTG TGTCACTTTC TCTCTATAA  
ATTCTGTTAG CTGCTCACTT AAACAATGTC CTCTTTGAGA AAATGTAAAA TAAAGGCTCT GTGCTTGACA GAATTCGGGC  
CGCCGCCAGG TCGTGTGGG TCCACGCCG CCGTCGCCG GCGGCCCGC TCAGCGTCCG CCGCCGCCAT GGGAGTGCAG  
GTGGAAACCA TCTCCCAGG AGACGGGCGC ACCTTCCCCA AGCGCGGCCA GACCTGCGTG GTGCACTACA CCGGGATGCT  
TGAAGATGGA AAGAAATTTG ATCTCTCCG GGACAGAAAC AAGCCCTTTA AGTTTATGCT AGGCAAGCAG GAGGTGATCC  
GAGGCTGGGA AGAAGGGGT GCGCAGATGA GTGTGGGTCA GAGAGCCAAA CTGACTATAT CTCAGATTA TGCTATGGT  
GCCATGGGC ACCCAGCAT CATCCACCA CATGCCACT TCGTCTCGA TGTGGAGCT CTAAAGCTG AATGACAGGA  
ATGGCTCCT CCTTAGCTC CTGTTCTTG GATCTGCCAT GGAGGGATCT GGTGCCTCCA GACATGTGCA CATGAGTCCA  
TATGGAGCTT TTCTGATGT TCCACTCCAC TTTGTATAGA CATCTGCCCT GACTGAATGT GTTCTGTAC TCAGCTTTGC  
TTCCGACACC TCTGTTTCT CTCTCCCTT CTCTCGTAT GTGTGTTTAC CTAACTATA TGCCATAAAC CTCAAGTTAT  
TCATTTTATT TTGTTTTCAT TTGGGGTGA AGATTCAATT TCAGTCTTTT GGATATAGGT TTCCAATTA GTACATGGTC  
AAGTATTAAC AGCACAAGTG GTAGGTTAAC ATTAGAATAG GAATTTGGT TGGGGGGGGG GTTTGCAAGA ATATTTTATT  
TTAATTTTTT GGATGAAAT TTTATCTATT ATATATATAA CATCTTGCT GCTGCGCTG CAAGCCATG CAGATGAGG  
CGCTGTGGA GGACTGAATT ACTCTCAAG TTGAGATGAT TCTTTGGGT AAATTAAGG CCCTACCTAA AACTGAGGTG  
GGGATGGGA GAGCCTTGC CTCCACCATT CCCACCCACC CTCCCTTAA ACCCTCTGCC TTTGAAAGTA GATCATGTTT  
ACTGCAATGC TGGACACTAC AGGTATCTGT CCCTGGGCA GCAGGGACCT CTGAAGCCTT CTTGTGGCC TTTTTTTTT  
TTCATCCTGT GGTTTTTCTA ATGGACTTC AGGAATTTT TAATCTCATA ACTTCCAAAG CTCCACCACT TCCTAAATCT  
TAAGAATTT AATTGACAGT TTCAATTGAA GGTGCTGTT GTAGACTTAA CACCCAGTGA AAGCCAGCC ATCATGACAA  
ATCCTTGAAT GTTCTTTAA GAAAATGATG CTGGTCACTG CAGCTTCAGC ATCTCTGTT TTTTATGCT TGGCTCCCTC  
TGCTGATCTC AGTTCTCTG CTTTCTCTC CTCAGCCCT TCTCAACCTT TGCTGTCT GTTAGTGTAT TTGGTGAGAA  
ATCGTTGCTG CACCTTCCC CCAGCACCAT TTATGAGTCT CAAGTTTTAT TATTGCAATA AAAGTGTCTT ATGCCGAAT TC  
GCCGCCGCCA TGGGAGTGA GGTGAAACC ATCTCCCAG GAGACGGCG CACCTTCCC AAGCGCGGCC AGACCTGCGT  
GGTCACTAC ACCGGGATGC TTGAAGATGG AAAGAAATTT GATTCTCTCC GGGACAGAAA CAAGCCCTT AAGTTTATGC  
TAGGCAAGCA GGAGGTGATC CGAGGCTGGG AAGAAGGGT TGCCAGATG AGTGTGGGT AGAGAGCCAA ACTGACTATA  
TCTCCAGATT ATGCTATGG TGCCACTGG CCCCAGGCA TCATCCACC ACATGCCACT CTCGTCTCG ATGTGGAGCT  
TCTAAAGCT GAATGACAGG AATGGCTCC TCCCTAGCT CCCTGTCTT GGATCTGCCR TTGAGGCTAT TGGTCTCC  
AGACATGTGC ACATGARTCC ATATGGAGCT TTTCTGATG TTCCACTCCA CTTGTATAG ACATCTGCCC TGACTGAATG  
TGTTCTGTCA CTCAGCTTTG CTTCGACAC CTCTGTTTCC TCTTCCCTT TCTCTCGTA TGTGTGTTA CTAACTAT  
ATGCCATAAA CTCAAGTTA TTCA AAGCTTCTAC CCTAGTCTGG TGCTACACT ACATTGCTTA CATCCAAGTG  
TGGTTATTT TGTGGCTCCT GTTATAACTA TTATAGCACC AGGTCTATGA CCAGGAGAAT TAGACTGGCA TTAAATCAGA  
ATAAGAGATT TTGCACCTG AATAGACCTT ATGACACCTA ACCAACCCCA TTATTTACAA TTAACAGGA ACAGAGGGAA  
TACTTTATCC AACTCACACA AGCTGTTTTT CTCCAGATC CATGCTTTTT TCGGTTTTAT ATTTTTAGA GATGGGGCT  
TCACTATGTT GCCACACTG GACTAAACT CTGGGCCCTA AGTGATTGTC CTGCTCAGC CTCTGAATA GCTGGGACTA  
CAGGGGCATG CCATCACACC TAGTTCATT CTCTATTTA AAATATACAT GGCTTAACT CCAACTGGGA ACCCAAAACA  
TTCATTTGCT AAGAGTCTGG TGTTCTACCA CTGAAGTAG GCTGGCCACA GGAATTATAA AAGCTGAGAA ATCTTTAAT  
AATAGTAACC AGGCAACATC ATTGAAGGCT CATATGTAAA AATCCATGCC TTCTTTCTC CCAATCTCCA TTCCAAACT  
TAGCCACTGG TTCTGGCTGA GGCCTTACGC ATACCTCCCG GGGCTTGAC ACACCTTCT CTACAGAAGA CACACCTTGG  
GCATATCTTA CAGAAGACCA GCCTTCTCT TGGTCTTGG TAGAGGGCTA CTTTACTGTA ACAGGGCCAG GGTGGAGAGT  
TCTCTCTGA AGCTCCATCC CCTCTATAGG AAATGTGTTG ACAATATTCA GAAGAGTAAG AGGATCAAGA CTCTTTGTG  
CTCAAAATACC ACTGTTCTCT TCTTACCCT GCCTAACCA GGAGCTTGT ACCCCAACT CTGAGGTGAT TTATGCCTTA  
ATCAAGCAAA CTTCCTCTT CAGAAAAGAT GGCTCATTTT CCCTCAAAAG TTGCCAGGAG CTGCCAAGTA TTCTGCCAAT  
TCACCCTGGA GCACAACTAA CAAATTCAGC CAGAACACAA CTACAGCTAC TATTAGAAT ATTATTATTA ATAAATCTCT  
CTCCAAATCT AGCCCTTGA CTTCGGATT CACGATTTCT CCCTTCTCT TAGAACTTG ATAAGTTTCC CGCGCTTCCC  
TTTTTCTAAG ACTACATGTT TGTCATCTTA TAAAGCAAG GGGTGAATAA ATGAACCAA TCAATAACT CTGGAATATC  
TGCAACAAC AATAATATCA GCTATGCCAT CTTCACAT TTAGCCAGT ATCGAGTTGA ATGAACATG AAAAAATCAA  
AACTGAATTC TTCCCTGTAA ATTCCCGTT TTGACGACG ACTGTGAGCC ACGTAGCCAC GCCTACTTAA GACAATTACA

AAAGGCGAAG AAGACTGACT CAGGCTTAAG CTGCCAGCCA GAGAGGGAGT CATTTTCATTG GCGTTTGAGT CAGCAAAGGT  
ATTGCTCTCA CATCTCTGGC TATTAAAGTA TTTCTGTGTG TTGTTTTCT CTGTGGCTGT TTTCTCTCAC ATTGCCCTCT  
CTAAAGCTAC AGTCTCTCCT TCTTTTCTT GTCCCTCCCT GGTGTTGGTAT GTGACCTAGA ATTACAGTCA GATTTCAGAA  
AATGATTCTC TCATTTTGCT GATAAGGACT GATTCTGTTT ACTGAGGGAC GGCAGAACTA GTTTCCTATG AGGCCATGGG  
TGAATACAACT TGAAGCTTCT CATGGGAGGG AATCTCTACT ATCCAAAATT ATTAGGAGAA AATTGAAAAAT TTCCAACTCT  
GTCTCTCTCT TACCTCTGTG TAAGGCAAAT ACCTTATTCT TGTGGTGTGTT TTGTAACCTC TTCAAACTTT CATTGATTGA  
ATGCTGTTC TGGCAATACA TTAGGTTGGG CACATAAGGA ATACCAACAT AAATAAAACA TTCTAAAAGA AGTTTACGAT  
CTAATAAAGG AGACAGGTAC ATAGCAAACCT AATTCAAAGG AGCTAGAAGA TGGAGAAAAT GCTGAATGTG GACTAAGTCA  
TTCAACAAAG TTTTCAGGAA GCACAAAGAG GAGGGGCTCC CCTCACAGAT ATCTGGATTA GAGGCTGGCT GAGCTGATGG  
TGGCTGGTGT TCTCTGTTGC AGAAGTCAAG ATGGCCAAAG TTCCAGACAT GTTTGAAGAC CTGAAGAATCT GTTACAGGTA  
AGGAATAAGA TTTATCTCTT GTGATTTAAT GAGGGTTTCA AGGCTCACCA GAATCCAGCT AGGCATAACA GTGGCCAGCA  
TGGGGGCGAG CCGGCAGAGG TTGTAGAGAT GTGTACTAGT CCTGAAGTCA GAGCAGGTTT AGAGAAGACC CAGAAAAACT  
AAGCATTGAG CATGTTAAAC TGAGATTACA TTGGCAGGGA GACCGCCATT TTAGAAAAAT TATTTTGGAG GTCTGCTGAG  
CCCTACATGA ATATCAGCAT CACTTAGAC ACAGCCTCTG TTGAGATCAC ATGCCCTGAT ATAAGAATGG GTTTTACTGG  
TCCATTCTCA GGAAAACTTG ATCTCATTC GGAACAGGAA ATGGCTCCAC AGCAAGCTGG GCATGTGAAC TCACATATGC  
AGGCAAACTC CACTCAGATG TAGAAGAAAG GTAATGAAC ACAAGATAA AATTACGGAA CATATTAAC TAACATGATG  
TTTCCATTAT CTGTAGTAAA TACTAACACA AACTAGGCTG TCAAAATTTT GCTGGATAT TTTACTAAGT ATAAATTATG  
AAATCTGTT TAGTGAATAC ATGAAAGTAA TGTGTAACAT ATAATCTATT TGGTTAAAAT AAAAAGGAAG TGCTTCAAAA  
CCTTTCTTT CTCTAAAGGA GCTTAACATT CTTCCTGAA CTTCATTAAG AGCTCTTCAA TTTGTTAGCC AAGTCCAATT  
TTTACAGATA AAGCACAGGT AAAGCTCAAA GCTGTCTTG ATGACTACTA ATTCAGATT AGTAAGATAT GAATTACTCT  
ACCTATGTGT ATGTGTAGAA GTCTTAAAT TTCAAAGATG ACAGTAATGG CCATGTGTAT GTGTGTGACC CACAACATC  
ATGGTCATTA AAGTACATTG GCCAGAGACC ACATGAAATA ACAACAATTA CATTCTCATC ATCTTATTTT GACAGTGAAA  
ATGAAGAAGA AAGTCTCTCC ATTGATCATC TGCTCTGAA TCAGGTAAAG AAATGACTGT AATTCTCATG GGACTGCTAT  
TCTTACACAG TGGTTTCTT ATCCAAAGAG AACAGCAATG ACTGTAATCT TAAATACTTT TGTTTTACCC TCACTAGAGA  
TCCAGAGACC TGTCTTTCAT TATAAGTGAG ACCAGCTGCC TCTCTAACT AATAGTTGAT GTGCATTGGC TTCTCCAGA  
ACAGAGCAGA ACTATCCAA ATCCCTGAGA ACTGGAGTCT CCTGGGCGAG GCTTCATCAG GATGTTAGTT ATGCCATCCT  
GAGAAAGCCC CGCAGGCCG TCCACAGGT GTCTGTCTCC TAACGTGATG TGTGTGGTT GTCTTCTCTG ACACCAGCAT  
CAGAGGTTAG AGAAAGTCTC CAAACATGAA GCTGAGAGAG AGGAAGCAAG CCAGCTGAAA GTGAGAAGTC TACAGCCACT  
CATCAATCTG TGTATTGTG TTTGGAGACC ACAATAGAC ACTATAAGTA CTGCTAGTA TGTCTTCAGT ATGGCTTTA  
AAAGCTGTCC CCAAAGGAGT ATTTCTAAAA TATTTGAGC ATTTGTAAGC AGATTITTA CCTCTTAAAG GGGAACTAAT  
TGGAAAGCTA CCACTCACTA CAATCATTGT TAACCTATTT AGTTACAACA TCTCATTTT GAGCATGCAA ATAAATGAAA  
AAGTCTTCT AAAAATCA TCTTTTATC CTGGAAGGAG GAAGGAAGGT GAGACAAAAG GGAGAGAGGG AGGGAAGCCT  
AATGAAACAC CAGTTACCTA AGACCAGAAT GGAGATCCTC CTCACTACCT CTGTGTAATA CAGCACCTAC TGAAGAAGT  
TTCATTCCCT GACCATGAAC AGCCTCTCAG CTCTGTTTT CTCTCTCAC AGAAATCCTT CTATCATGTA AGCTATGGCC  
CATTCCATGA AGGCTGCATG GATCAATCTG TGCTCTGAG TATCTCTGAA ACCTCTAAAA CATCCAAGCT TACCTTCAAG  
GAGAGCATGG TGGTAGTAGC AACCAACGGG AAGGTTCTGA AGGAGAGACG GTTGAGTTTA AGCCAATCCA TCACTGATGA  
TGACCTGGAG GCCATCGCCA ATGACTCAGA GGAAGGTAAG GGGTCAAGCA CAATAATATC TTTCTTTTAC AGTTTAAAGC  
AAGTAGGGAC AGTAGAATTT AGGGGAAAAT TAAACGTGGA GTCAGAATAA CAAGAAGACA ACCAAGCATT AGTCTGGTAA  
CTATACAGAG GAAAAATTAAT TTTATCCTT CTCCAGGAGG GAGAAATGAG CAGTGGCCTG AATCGAGAAT ACTTGCTCAC  
AGCCATTATT TCTTAGCCAT ATTGTAAAGG TCGTGTGACT TTAGCCCTT CAGGAGAAAG CAGTAATAAG ACCACTTACG  
AGCTATGTT CTCTCATCT AACTATGCCT CTTGGTCTAT TTACATAAT CTTTTCGTGA TTCAGTTTCC TCTACTGTAA  
AATGGAGATA ATCAGAATCC CCCACTCATT GGATTGTGT AAGGATTAAAG AGTCTCAGGC TTTACAGACT GAGCTAGCTG  
GGCCCTCTG ACTGTTATAA AGATTAAATG AGTCAACATC CCTCACTTC TGGACTAGAA TAATGTCTGG TACAAAGTAA  
GCACCAATA AATGTTAGCT ATTACTATCA TTATTATTAT TATTTTATT TTTTTTTT AGATGGAGTC TGGCTCTGTC  
ACCAAGGCTG GAGTGCAGTG GCACAATCTC GGCTCACTGC AAGCTCTGCC TCCTGGGTTT ATGCCATTCT CCTGCCTCAG  
CCTCCCGAGT AAGCTGGGAA TACAGGCACC CGCCACTGTT CCCGGCTAAT TTTTGTATT TTTAGTAGAG ACGGAGTTTC  
ACCGTGGTCT CCATCTCCTC GTGATCCACC CACTCTGGCC TCCAAAGTG CCGGATTAC AGGCGTGAGC CACCGGCCCC  
GGCTATTAT TATTATTAT ACTACTACTA CTACCTATCC AGCAATACTA ATTTATTAAT GACTGGATTA  
TGTCTAAACC TCACAAGAAT CCTACCTTCT CATTTTACAT AAAAGGAAAC TAAGCTCATT GAGATAGGTA AACTGCCCAA  
TGGCATACT CTGTAAGTG GAGAGCCTCA AATCTAATTC AGTTCTACCT GAGTAAAAAA ATCATGGTTT CTCTCCATC  
CCTTACTGT ACAAGCCTCC ACATGAACCTA TAAACCAAT ATCTCTGTT TTAAGATAAT ACCTAAGCAA TAACGCATGT  
TCACCTAGAA GGTTTTAAAA TGTAACAAAA TATAAGAAAA TAAAAATCAC TCATATCGTC AGTGAGAGTT TACTACTGCC  
AGCACTATGG TATGTTTCT TAAAACTTT GCTATACACA TACCTACATG TGAACAAATA TGTCTAACAT CAAGACCACA  
CTATTACAA CTTTATATCC AGCTTTCTT ACTTAGCAAT GTATTGAGGA CATTTTAGAG TGCCCGTTTT TCACCATTAT  
AAGCAATGCA ACAATGAACA TCTGTATAAA TAAATATTCA TTTCTCTCAC CTTTATTTC CTAGAATAT ATCTTAGAA  
GTAGAATTC CCAGAGCCAT GAGGATTGT GACGCTATTG ATATGTGCCA CTTTGCACTC TCTGTGACAT ATATAATTAT  
TTTTAATGCA TTCATTTTT TCTCAGAGTG CATCTGTTG AAAACATAGA CGGGAATAC TGGTAGTCTT CCTGTGAGT  
TAGAAACACC CAAACAATGA AAAATGAAAA AGTTGCACAA ATAGTCTCTA AAAACAATGA AACTATTGCC TGAGGAATTG  
AAGTTTAAAA AGAAGCACAT AAGCAACAAC AAGGATAATC CTAGAAAACC AGTTCTGCTG ACTGGGTAGT TTAATCTCT  
TTGCTTCTT CATCTGGATT GGAATATTCC TAATACCCCC TCCAGAACTA TTTCCCTGT TTGACTAGA CTGTGTATAT  
CATCTGTGT TGTACATAGA CATTAACTG CACTGTGTAT CATGGTTTA GAAATCATCA AGCTAGGTC ATCACTTTT  
AGCTTCTGA GCAATGTGAA ATACAATTT ATGAGGATCA TCAAAATACGA ATTCATCTG AATGACGCC TCAATCAAAG  
TATAATTCGA GCCAATGATC AGTACCTCAC GGCTGCTGCA TTACATAATC TGGATGAAGC AGGTACATTA AAATGGCACC  
AGACATTTCT GTCATCTCC CTCTCTTCA TTTACTTATT TATTTATTTC AATCTTCTG CTGCAAAAA ACATACCTCT  
TCAGAGTTCT GGGTTGCACA ATTCTCCAG AATAGCTTGA AGCACAGCAC CCCATAAAAA ATCCCAAGCC AGGGCAGAA  
TTCAACTAA ATCTGGAAGT TCCACAAGAG AGAAGTTTCC TATCTTTGAG AGTAAAGGGT TGTGCACAAA GCTAGTGTAT  
GTACTACCT TTTGTTCTT TCCAGACATC TACCTCTCA TTTTAAAACT GAGGAAACTG TCAGACATAT TAAAGGATT  
ACTCAGATT ACCCAGAAGC CAATGAAGAA CAATCACTCT CTTTAAAAA GTCTGTGAT CAACTCACA AGTAACACCA  
AACCAGGAAG ATCTTTATTA TCTGTGATA CATATTTGTG AGGCAAAACC TCAATAAGC TACAAATATG GCTTAAAGGA

EPI-109

77

TGAAGTTTAG TGTCCAAAAA CTTTTATCAC ACACATCCAA TTTTCATGGC GGACATGTTT TAGTTTCAAC AGTATACATA  
TTTTCAAAGG TCCAGAGAGG CAATTTTGCA ATAAACAAGC AAGACTTTTT CTGATTGGAT GCACTTCAGC TAACATGCTT  
TCAACTCTAC ATTTACAAAT TATTTTGTGT TCTATTTTC TACTTAATAT TATTTCTGCA ATTTTCCCAA TATTGACATC  
GTGTATGTAT TTGCCATTTT TAATATCACT AGACAAATTA ATCAGGTTGC TACGTTGGTC CCTTGGGTTT ACTCTAAATA  
GCTTGATTGC AAATATCTTT GTATATATTA TTGTTTTTC TCCTATCTTG TAATTTCTTT GAGCACATCC CAAAGAGGAA  
TGCCTAGATC AATGGGCACA AATAATTTGA CAGCTCTTAT TAAACATTAT TCTGTAAGTA AAAACTGAAC TACTTTTCAG  
TATCACTAGC AACATATGAG TGTATCAGCT TCCTAAACCC CTCCATGTTA GGTCATTATG AACTTATGAT CTAACAAATT  
ACAGGGTCTT ATCCCACTAA TGAAATTATA AGAGATTCAA CACTTATTCA GCCCCGAAGG ATTCATTCAA CGTAGAAAAAT  
TCTAAGAAC TTAACCAAGT ATTTACCTGC CTAGTGAGTG TGGAAGACAT TGTGAAGGAC ACAAAGATGT ATAGAATTCC  
ATTCCTGACT TCCAGGTATT TACACCATAG GTGGGGACCT AACTACACAC ACACACACAC ACACACACAC ACACACACAC  
ACCATGCACA CACAATCTAC ATCAACACTT GATTTTATAC AAATACAATG AATTTACTTT CTTTTGGTTT CTCTCTTCA  
CCAGTGAAAT TTGACATGGG TGCTTATAAG TCATCAAAGG ATGATGCTAA AATTACCGTG ATTCTAAGAA TCTCAAAAAAC  
TCAATTGTAT GTGACTGCCC AAGATGAAGA CCAACCAGTG CTGCTGAAGG TCAGTTGTCC TTGTCTCCA ACTTACCTTC  
ATTTACATCT CATATGTTTG TAAATAAGCC CAATAGGCAG ACACCTCTAA CAAGGTGACA CTGCTCTCTT TCCTTCTAC  
CACAGCCCCC ACCTACCCAC CCCACTCCCA TTGATTCCAG AGGCGTGCCT AGGCAGGATC TATGAGAAAA TATAACAGAG  
AGTAAGAGGA AAATTACCTT CTTTCTTTT CTTTCCCTG CTTGACCTTA TTCACCTCCC ATCCAGAGC ATCCATTTAT  
TCCATTGATC TTTACTGACA TCTATTATCT GACCTACACA ATACTAGACA TTAGGACAAT GTGGCTGCTC TCCAAGAAAC  
TCAAATAAGC CACTGAGAT CAGAGAGGAT TAATCACCCTG CCAATGGGCA CAAAGCAACA AGTGGGGAGC CAAGTCCCAA  
AATGGGGCCT GCTGCTTCCA GTTCCCCTCT CTCTGCATTG ATGTCAGCAT TATCCTTCGT CCCAGTCTG TCTCCACTAC  
CACTTTCCCC CTCAAACACA CACACACACA ACAGCCTTAG ATGTTTTCTC CACTGATAAG TAGGTGACTC AATTTGTAAG  
TATATAATCC AAGACCTTCT ATTCCCAAGT AGAATTTATG TGCCTGCTG TGCTTTCTA CCTGGATCAA GTGATGTCTA  
CAGAGTAGGG CAGTAGCTT ATTCATGAAC TCATTCAACA AGCATTATTC ACTGAGAGCC TTGTATTTT CAGGCATAGT  
GCCAACAGCA GTGTGGACAG TGGTGCATCA AAGCCTCTAG TCTCATAGAA CTTAGTCTTC TGGAGGATAT GGAACACAGA  
CAACCCAAAC AACCAACAA AGAGCAAGAT GCTGCAAAAA AAAAAAAAT GAATAGGGTG CTAAGATAGA  
GAAAAGTGGG AGAGTGCTAT TTAGACAAAG TGTAAAAAC AAAGCCCTT GTGAGATGAG AGCTGCCGAC AGAGGGGGCG  
GGTCATGGTT GTGGGTTTTT GGGTAGGACA TTCAGAGGAG GGGGCGGGTC GTGGTTGTGG GTTTTGGGT AGGACATTCA  
GAGGAGGGGG CGGGTCGTGG TTGTGGGTTT TTGGGTAGGA CATTACAGAG AGGGGGCGGG TCGTGGTTGT GGGTTTTTGG  
GTAGGACATT CAGAGGAGGG GCGGGTCTGT GGTGTGGGT TTTTGGGACA TTCAGAGGAG TCTGAATGCA CCCAGGCCTA  
CAACTTCAAG ATGGTAAAGG ACAGCTCCAA GGATCAGAA AGCATTCTT GGAAGTGGG CATTTGAGA AGGAGGAAAA  
ATATGCAGAG ACTAGTCTT GCAGAGCTTG CATTGGATT TCAATTGAGG TACAATGAAA ACCCATTAAT GGGTTTCAACA  
CAGTGCAATG GCCTGACCTC ACTTATATT CTTAAATAG AAAACAGATC AGAAGGAAGG CAATAGAGAA GCAGAAAGTC  
CAATGAGGAG GTTTCACAGC AGTCATGGGG GTGGGGTAAG GAAAAGAAAGT GGAAGAAAC AGACAGAATT GGGTTATATT  
TTGGAGATAG AACCAACAGA AGGAAGAGGA GAAACAACAT TTAGTGAGAA GGGAAAAAGT AGGAGAGGAA  
TAGGTTTTGGG AAATAAATCC TGCTGACATT GGAACCCCA AGGAAGCCTC AAAAGTATAT TACTTGCTT TAGATTTAAA  
AGAATAGGAA AGAAGCATCT CACTTGGAA TTTGAAATCT ATTTTCCAT AAAAGTATTG TTAATTTCTA CTCATACTCA  
CAAGAAAAGT ACATTCTAAA GAGTATATTG AAAGAGTTTA CTGATATACT TAGGAATTTT GTGTGTATGT GTGTGTGTGT  
ATGTGTGTGT GTGTGTTTAA CTTCAATTG TTGACTTAAA TACTAGATA AATGTCATCT AAATGCTAAA TTGATTTCCC  
AAAGGTATGA TTTGTTCACT TGGAGATCAA AATGTTTAGG GGGCTTAGAA TCACTGTAGT GCTCAGATTG GATGCAAAAT  
GTCTTAGGCC TATGTTGAAG GCAGGACAGA AACAATGTTT CCTCCTACC TGCTGGATA CAGTAAGATA CTAGTGTCAC  
TGACAATCTT CATAACTAAT TTAGATCTCT CTCCAATCAA CTAAGGAAAT CAACTCTTAT TAATAGACTG GGCCACACAT  
CTACTAGGCA TGAATAAAT GCTTGCTGAA TGAACAAATG AATGAAGAGC CTATAGCATC ATGTTACAGC CATAGTCTTA  
AAGTGGTGT TCTCATGAAG GCCAAATGCT AAGGGATTGA GCTTCAGTCC TTTTCTAAC ATCTGTCTT CTAACAGAAAT  
TCTTCTTTT TCTTCATAGG AGATGCCTGA GATACCCAAA ACCATCAGAG GTAGTGAGAC CAACCTCTC TCTTCTGGG  
AAACTCACGG CACTAAGAAC TATTTACAT CAGTTGCCA TCCAACTTG TTTATTGCCA CAAAGCAAGA CTACTGGGTG  
TGCTTGGCAG GGGGGCCACC CTCTATCACT GACTTTCAGA TACTGGAAAA CCAGGCGTAG GTCTGGAGTC TCACTTGTCT  
CACTTGTGCA GTGTGACAG TTCATATGTA CCAATGACAT GAAGAAGCTA AATCCTTTAC TGTTAGTCAT TTGCTGAGCA  
TGTAAGTGC CTTGTAATTC TAAATGAATG TTTACACTCT TTGTAAGAGT GGAACCAACA CTAACATATA ATGTTGTTAT  
TTAAGAACA CCTATATTT TGCATAGTAC CAATCATTTT AATTATTATT CTTATAACA ATTTTAGGAG GACCAGAGCT  
ACTGATAGT TACTACAAA AGACTCTACC CATATTACAG ATGGGCAAAAT TAAGGCATAA GAAAACATAA AATATGAC  
AATAGCAGT GAAACAAGAA GCCACAGACC TAGGATTTCA TGATTTTATT TCACTGTTT GCCTTCTGCT TTTAAGTTGC  
TGATGAATC TTAATCAAAT AGCATAAGT TCTGGGACCT CAGTTTTATC ATTTTCAAAA TGGAGGGAAT AATACCTAAG  
CCTTCTGCC GCAACAGTTT TTTATGCTAA TCAGGGAGGT CATTGTGTA AAATACTTCT CGAAGCCGAG CCTCAAGATG  
AAGGCAAGC ACGAAATGTT ATTTTAAAT TATTATTTAT ATATGTATT ATAAATATAT TTAAGATAAT TATAATATAC  
TATATTTATG GGAACCCCTT CATCCTCTGA GTGTGACCAG GCATCCTCCA CAATAGCAGA CAGTGTTCCT TGGGATAAGT  
AAGTTTGATT TCATTAATAC AGGGCATTIT GTGCCAAGTT GTGCTTATCC CATAGCCAGG AAACGTGCA TTCTAGTACT  
TGGGAGACCT GTAATCATAT AATAAATGTA CATTAAATAC CTGAGCCAG TAATTGGTCC GATCTTTGAC TCTTTTGCCA  
TTAAACTTAC CTGGGCATT TGTTCATT CAATCCACC TGCAATCAAG TCCTACAAGC TAAATTAGA TGAACCTAAC  
TTTGACAACC ATGAGACCAC TGTTATCAAA ACTTCTTTT CTGGAATGTA ATCAATGTTT CTCTAGGT CTAAAAATTG  
TGATCAGACC ATAATGTTAC ATTATTATCA ACAATAGTGA TTGATAGAGT GTTATCAGTC ATAATAAAT AAAGCTTGCA  
ACAAAATTCT CTGACACATA GTTATTCATT GCCTTAATCA TTATTTTACT GCATGGTAAT TAGGGACAAA TGGTAAATGT  
TTACATAAAT AATTGTATT AGTGTTACTT ATAAATCA AACCAAGATT TTATTTTTT TCTCTCTT TCTCTGCTG  
CAGTATGCAT AAATGGCATT AATAATGATA TATTTCCGG GTTCACTTAA AGCTCATATT ACACATACAC AAAACATGTG  
TTCCATCTT TATACAACT CACACATACA GAGCTACATT AAAACAACT AATAGGCCAG GCACGGTGGC TCAGACCTGT  
AATCCAGCA CTTTGGGAGG ACCAACCTCT TCGAGGCACA AGGCACAACA GGCTGCTCTG GGATTCTCTT CAGCCAATCT  
TCATTGCTCA AGTGCTGAA GCAGCCATGG CAGAAGTACC TGAGCTGCC AGTGAAATGA TGGCTTATTA CAGTGGCAAT  
GAGGATGACT GTTCTTTGA AGCTGATGGC CTAACACAGA TGAAGTGCTC CTCCAGGAC CTGGACCTCT GCCCTCTGGA  
TGGCGGCATG CAGCTACGAA TCTCCGACCA CCACTACAGC AAGGGCTTCA GGCAGGCCGC GTCAGTTGTT GTTGCCATGG  
ACAAGCTAG GAAGATGCTG GTTCCCTGCC CACAGACCTT CAGGAGAAAT GACCTGAGCA CTTCTTTCC CTTCACTTT  
GAAGAAGAAC CTATCTTCTT CGACATAGG CATAACGAGG CTTATGTGCA CGATGCACCT GTACGATCAC TGAACGAC

GCTCCGGGAC TCACAGCAAA AAAGCTTGGT GATGTCTGGT CCATATGAAC TGAAAGCTCT CCACCTCCAG GGAACAGGATA  
TGGAGCAACA AGTGGTGTTC TCCATGTCTT TGTACAAGG AGAAGAAAGT AATGACAAAA TACCTGTGGC CTGGGGCCCTC  
AAGGAAAAAG ATCTGTACCT GTCCTGCGTG TTGAAGATG ATAAGCCAC TCTACAGCTG GAGAGTGTAG ATCCCAAAAA  
TTACCCAAAG AAGAAGATGG AAAAGCGATT TGTCTTCAAC AAGATAGAAA TCAATAACAA GCTGGAATTT GAGTCTGCCC  
AGTTCCCAA CTGGTACATC AGCACCTCTC AAGCAGAAAA CATGCCCGTC TTCCTGGGAG GGACCAAAAGG CGGCCAGGAT  
ATAACTGACT TCACCATGCA ATTTGTGTCT TCCTAAAGAG AGCTGTACCC AGAGAGTCTT GTGTGAATG TGGACTCAAT  
CCCTAGGGCT GGCAGAAAAGG GAACAGAAAG GTTTTTGAGT ACGGCTATAG CCTGGACTTT CTGTGTGTCT ACACCAATGC  
CCAACCTGCT GCCTTAGGGT AGTGCTAAGA GGATCTCTCTG TCCATCAGCC AGGACAGTCA GCTCTCTCTT TTCAGGGCCA  
ATCCCAAGCC CTTTTGTGA GCCAGGCCCTC TCTACCTCT CTTACTCACT TAAAGCCCGC CTGACAGAAA CCACGGCCAC  
ATTTGGTTCT AAGAAACCCT CTGTCAATCG TCCCAACATT CTGATGAGCA ACCGCTTCCC TATTTATTTA TTTATTTGTT  
TGTTTGTGTTT ATTCATTGGT CTAATTTATT CAAAGGGGGC AAGAAGTAGC AGTGTCTGTA AAAGAGCCTA GTTTTTAATA  
GCTATGGAAT CAATTCAATT TGGACTGGTG TGCTCTCTTT AAATCAAGTC CTTTAATTA GACTGAAAAT ATATAAGCTC  
AGATTATTTA AATGGGAATA TTTATAAATG AGCAAATATC ATACTGTTCA ATGGTTCTGA AATAAACTTC TCTGAAG  
AGAAAGAAAG AGAGAGAGAA AGAAAAGAAA GAGGAAGGAA GGAAGGAAGG AAGAAAGACA GGCTCTGAGG  
AAGGTGGCAG TTCCTACAAC GGGAGAACCA GTGGTTAATT TGCAAAGTGG ATCCTGTGGA GGCANNCAGA GGAGTCCCTC  
AGGCCACCCA GACAGGGCTT TTAGCTATCT GCAGGCCAGA CACCAAAATTT CAGGAGGGCT CAGTGTTAGG AATGGATTAT  
GGCTTATCAA ATTCACAGGA AACTAACATG TTGAACAGCT TTTAGATTTT CTGTGGAATA TATAACTTAC TAAAGATGGA  
GTTCTGTGA CTGACTCTCTG ATATCAAGAT ACTGGGAGCC AAATTAATAA TCAGAAGGCT GCTTGGAGAG CAAGTCCATG  
AAATGCTCTT TTTCCACAG TAGAACCTAT TTCCCTCGTG TCTCAAATAC TTGCACAGAG GCTCACTCCC TTGGATAATG  
CAGAGCGAGC ACGATACCTG GCACATACTA ATTTGAATAA AATGCTGTCA AATTCCCAT CACCCATTCA AGCAGCAAAC  
TCTATCTCAC CTGAATGTAC ATGCCAGGCA CTGTGCTAGA CTGGGCTCAA AAAGATTTCA GTTTCCTGGA GGAACCAAGGA  
GGGCAAGGTT TCAACTCAGT GCTATAAGAA GTGTTACAGG CTGGACACGG TGGCTCACGC CTGTAATCCC AACATTTGGG  
AGGCCGAGGC GGGCAGATCA CAAGGTCAGG AGATCGAGAC CATCTGGCT AACATGGTGA AACCTGTCT CTACTAAAAA  
TACAAAAAT TAGCCGGGCG TTGGCGGCAG GTGCTGTAG TCCAGCTGC TGGGGAGGCT GAGGCAGGAG AATGGTGTGA  
ACCCGGGAGG CGGAACCTGC AGGGGGCCGA GATCGTGCCA CTGCACTCCA GCCTGGGCGA CAGAGTGAGA CTCTGTCTCA  
AAAAAAAAA AAAAGTGTTA TGATGCAGAC CTGTCAAAGA GGCAAAGGAG GGTGTTCTTA CACTCCAGGC ACTGTTCTA  
ACCTGGACTC TCATTCATTC TACAAATGGA GGGTCCCTT GGGCAGATCC CTGGAGCAGG CACTTTGCTG GTGTCTCGGT  
TAAAGAGAAA CTGATAACTC TTGGTATTAC CAAGAGATAG AGTCTCAGAT GGATATTCTT ACAGAAACAA TATCCCCT  
TTTCAGAGTT CACCAAAAAA TCATTTTAGG CAGAGCTCAT CTGGCATTTA TCTGGTTTCA CCATGAGATT GGCTAGGTA  
ACAGCACCTG GTCTGTCAGG GTTGTGTGAG CTTATCTCCA GGGTTGCCCC AACTCCGTCA GGAGCCTGAA CCCTGCATAC  
CGTATGTTCT CTGCCCCAGC CAAGAAAGGT CAATTTTCTC CTCAGAGGCT CCTGCAATTG ACAGAGAGCT CCCGAGGCAG  
AGAACAGCAC CCAAGGTAGA GACCCACACC CTCAATACAG ACAGGGAGGG CTATTGGCCC TTCATTGTAC CCATTATCC  
ATCTGTAAGT GGAAGATTC CTAACTTAA GTACAAAGAA GTGAATGAAG AAAAGTATGT GCATGTATAA ATCTGTGTGT  
CTTCCACTTT TTCCACATA TACTAAATT AAACATTCTT CTAACGTGGG AAAATCCAGT ATTTAATGT GGACATCAAC  
TGCACAACGA TTGTACAGGA AACATGCAT ATTTGCATGG TGATACATTT GCAAAATGTG TCATAGTTTG CTACTCTTG  
CCCTTCCATG AACCAGAGAA TTATCTCAGT TTATTAGTCC CCTCCCTAA GAAGCTTCCA CCAATACTCT TTTCCCTTT  
CCTTTAATT GATTGTGAAA TCAGGTATTC AACAGAGAAA TTTCTCAGCC TCTACTTCT GCTTTTGAAA GCTATAAAAA  
CAGCGAGGGA GAAACTGGCA GATACCAAAC CTCTTCGAGG CACAAGGCAC AACAGGCTGC TCTGGGATTC TCTCAGCCA  
ATCTTCATTG CTCAAGTATG ACTTTAATCT TCCTTACAAC TAGGTGCTAA GGGAGTCTCT CTGTCTCTCT GCCTCTTTGT  
GTGTATGCAT ATTCTCTCTC TCTCTCTCT TCTTCTCTG TCTCTCTCT CCTTCTCTC TGCTCTCTCT CTAGCTTTT  
TGCAAAAAAT CCAGGTGTAA TATAATGCTT ATGACTCGGG AAAATATTCTG GGAATGGATA CTGCTTATCT AACAGCTGAC  
ACCCTAAAGG TTAGTGTCAA AGCCTCTGCT CCAGCTCTCC TAGCCAATAC ATTGCTAGTT GGGGTTTGGT TTAGCAAAATG  
CTTTCTCTA GACCCAAAGG ACTTCTCTTT CACACATTCA TTCATTTACT CAGAGATCAT TTCTTTGCAT GACTGCCATG  
CACTGGATGC TGAGAGAAAT CACACATGAA CGTAGCCGTC ATGGGGAAGT CACTCATTTT CTCTTTTITA CACAGGTGTC  
TGAAGCAGCC ATGGCAGAAG TACCTGAGCT CGCCAGTGAA ATGATGGCTT ATTACAGGTC AGTGGAGACG CTGAGACCAG  
TAACATGAGC AGGTCTCTCT TTTCAAGAGT AGAGTGTTAT CTGTGCTTGG AGACCAGATT TTTCCCTTAA ATTGCCTCTT  
TCAGTGGCAA ACAGGGTGCC AAGTAAATCT GATTTAAAGA CTACTTTCCC ATTACAAGT CTCCAGCCAT TGGGACCTGG  
AGGCTATCCA GATGTGTTGT TGCAAGGGCT TCTGCAGAG GCAAAATGGG AGAAAAGATT CCAAGCCCAT AATACAAGGA  
ATCCCTTTGC AAAGTGTGGC TTGGAGGGAG AGGGAGAGCT CAGATTTTAG CTGACTCTGC TGGGCTAGAG GTTAGGCCTC  
AAGATCCAAC AGGGAGCACC AGGGTGCCCA CTGCCAGGC CTAGAATCTG CTTCTGGAC TGTCTGCGC ATATCACTGT  
GAACTTGGC AGGTGTTTCA GGCAGCTTTG AGAGGCAGGC TGTTTGAGT TTCTTATGAA CAGTCAAGTC TTGTACACAG  
GGAAGGAAAA ATAAACCTGT TTAGAAGACA TAATTGAGAC ATGTCCCTGT TTTATTACA GTGGCAATGA GGATGACTTG  
TTCTTTGAG CTGATGGCCC TAAACAGATG AAGTGAAGAC TATGGGTTTA ACTCCCAACC CAAGGAAGGG CTCTAACACA  
GGGAAAGCTC AAAGAAGGGA GTTCTGGGCC ACTTTGATGC CATGGTATTT TGTTTAGAA AGACTTTAAG CTCTCCAGT  
GAGACACAGG CTGCACCACT TGCTGACCTG GCCACTTGGT CATCATATCA CCACAGTCAC TACTAACCTG TGGTGGTGGT  
GGCCACACTT GGTGGTGACA GGGGAGGAGT AGTGATAATG TTCCCATTTT ATAGTAGGAA GACAACCAAG TCTTCAACAT  
AAATTTGATT ATCTTTTAA GAGATGGATT CAGCCTATGC CAATCACTTG AGTTAACTC TGAAACCAAG AGATGATCTT  
GAGAACTAAC ATATGTCTAC CCTTTTGGAG TAGAATAGTT TTTTGTACC TGGGGTGAAG CTTATAACAA CAAGACATAG  
ATGATATAAA CAAAAGATG AATTGAGACT TGAAAGAAAA CCATCACTT GCTGTTTGAC CTGACAAGT CATTTTACCC  
GCTTTGGACC TCATCTGAAA AATAAAGGGC TGAGCTGGAT GATCTCTGAG ATTCCAGCAT CCTGCAACCT CCAGTCTGA  
AATATTTTCA GTTGTAGCTA AGGGCATTG GGCAGCAAA GTTCATTTT CAGACTCATC CTTACAAAGA GCCATGTTAT  
ATTCCTGCTG TCCCTTCTGT TTTATATGAT GCTCAGTAGC CTTCTAGGT GCCCAGCCAT CAGCCTAGCT AGGTGAGTTG  
TGCAGGTTGG AGGCAGCCAC TTTTCTCTGG CTTTATTTTA TTCCAGTTTG TGATAGCCTC CCCTAGCCTC ATAATCCAGT  
CCTCAATCTT GTTAAAAACA TATTTCTTTA GAAGTTTAA GACTGGCATA ACTTCTTGGC TGCAGCTGTG GGAGGAGCCC  
ATTGGCTTGT CTGCTGGGCC TTGCCCCC ATTGCCTCTT CCAGCAGCTT GGCTCTGCTC CAGGCAGGAA ATTCTCTCT  
GCTCAACTTT CTTTGTGCA CTTACAGGT TCTTTAACTG TCTTTCAAGC CTTTGAACA TTATCAGCCT TAAGGCAACC  
TCAGTGAAGC CTTAATACGG AGCTTCTCTG AATAAGAGGA AAGTGGTAAC ATTTCAAAA AAGTACTCTC ACAGGATTTG  
CAGAATGCCT ATGAGACAGT GTTATGAAAA AGGAAAAAAA AGAACAGTGT AGAAAAATTG AATACTTGCT GAGTGAGCAT  
AGGTGAATGG AAAATGTTAT GGTCTCTGC ATGAAAAAGC AAATCATAGT GTGACAGCAT TAGGGATACA AAAAGATATA

GAGAAGGTAT ACATGTATGG TGTAGGTGGG GCATGTACAA AAAGATGACA AGTAGAATCG GGATTTATTC TAAAGAATAG  
CCTGTAAGGT GTCCAGAAAGC CACATTCTAG TCTTGAGTCT GCCTCTACCT GCTGTGTGCC CTGAGTACA CCCTTAACCT  
CCTTGAGCTT CAGAGAGGGA TAATCTTTTT ATTTATTTT ATTTATTTT GTTTTGTITT GTTTGTITT GTTTATGAG  
ACAGAGTCTC ACTCTGTTGC CCAGGCTGGA GTGCACTGGT ACAATCTTGG CTTACTGCAT CCTCCACCTC CTGAGTTCAA  
GCGATTCTCC TTCTCAGTC TCCTGAATAG CTAGGATTAC AGGTGCACCC CACCACACCC AGCTAAATTT TGTATTTTTA  
GTAGAGAAGG GGTTCGCCA TGTGGCCAG GCTGGTTTTG AAGTCTGAC CTAAATGATT CATCCACCTC GGCTTCCAA  
AGTGCTGGGA TTACAGGCAT GAGCCACCAC GCCTGGCCCA GAGAGGGATG ATCTTTAGAA GCTCGGGATT CTTTCAAGCC  
CTTTCCTCT CTCTGAGCTT TCTACTCTCT GATGTCAAAG CATGGTTTCT GGCAGGACCA CCTCACCAGG CTCCCTCCCT  
CGCTCTCTCC GCAGTGCTCC TTCCAGGACC TGGACCTCTG CCCTCTGGAT GCGGCGATCC AGCTACGAAT CTCCGACCAC  
CACTACAGCA AGGGCTTCAG GCAGGCCGCG TCAGTTGTTG TGGCCATGGA CAAGCTGAGG AAGATGCTGG TTCCCTGCCC  
ACAGAGCTTC CAGGAGAATG ACCTGAGCAC CTCTTTCCCT TTCACTTTT AAGAAGGTAG TTAGCCAAAG GCAGGACGTA  
GATCTCCACT TGTGCTCTT TGAAGTCAT CAAGCCCCAG CCAACTCAAT TCCCCAGAG CCAAAGCCCT TAAAGGTAG  
AAGGCCACG GGGGAGACAA AACAAAGAAG GCTGGAACC AAAGCAATCA TCTCTTAGT GGAACTATT CTAAAGAAG  
ATCTTGATGG CTAAGTACAT TTGCAACTCC CTCACCTTT CTCAGGGGCC TTCACTTAC ATTGTACCA GAGGTTCTGA  
ACCTCCCTGT GGGCTAGTGT TATGACCATC ACCATTTTAC CTAAGTAGCT CTGTTGCTCG GCCACAGTGA GCAGTAATAG  
ACCTGAAGCT GGAACCCATG TCTAATAGTG TCAGGTCCAG TGTTCTTAGC CACCCACTC CCAGCTTCTC CCCTACTGGT  
GTTGTCATCA GACTTTGACC GTATATGCTC AGGTGTCCT CAGAATAATCA AATTTTGCCA CCTCGCTCA CGAGGCCATG  
CTTCTGATT TTATACCTAA ACAACATGTG CTCCACCTT CAGAACCTAT CTTCTCGAC ACATGGGATA ACGAGGCTTA  
TGTGCACGAT GCACCTGTAC GATCACTGAA CTGCACGCTC CGGGACTCAC AGCAAAAAAG CTGGGTGATG TCTGGTCCAT  
ATGAACTGAA AGCTCTCCAC CTCCAGGGAC AGGATATGGA GCAACAAGGT AAATGGAAC ATCTGGTTT CCCTGCTGG  
CCTCCTGGCA GCTTGCTAAT TCTCCATGTT TAAACAAAG TAGAAAGTTA ATTTAAGGCA AATGATCAAC ACAAGTGAAG  
AAAAATATTA AAAAGGAATA TACAACTTT GGTCTAGAA ATGGCACATT TGATTGCACT GGCCAGTGCA TTTGTTAACA  
GAGAGTGAC CCTGAGAAAT TAGACGGCTC AAGCACTCCC AGGACCATGT CCACCAAGT CTCTGGGCA TAGTGACGTG  
TCAATCTTC CACAATATGG GGTCAATTTG TGGACATGGC CTAAGTCCCT GTGGGTCTC TCTCTGTT GTTGAGGCTG  
AAACAAGAGT GCTGGAGCGA TAATGTGTCC ATCCCCCTCC CCAGTCTTCC CCCCTTGCCC CAACATCCGT CCCACCAAT  
GCCAGGTGGT TCCTGTAGG GAAATTTTAC CGCCAGCAG GAACTTATAT CTCTCCGCTG TAACGGGCAA AAGTTTCAAG  
TGCGGTGAAC CCATCATTAG CTGTGGTGAT CTGCTGGCA TCGTGCCACA GTAGCCAAAG CCTCTGCACA GGAGTGTGGG  
CAACTAAGGC TGCTGACTTT GAAGGACAGC CTCCTCAGG GGAAGCTAT TTGCTCTCAG CCAGGCCAAG AAAATCTGT  
TTCTTTGGA TCGGGTAGTA AGAGTGATCC CAGGGCTTCC AATTGACACT GCTGTGACTG AGGAAGATCA AATGAGTGT  
CTCTCTTGG AGCCACTTTC CCAGCTCAGC CTCTCTCTC CCAGTTCTT CCCATGGGCT ACTCTCTGTT CTGAAACAG  
TTCTGGTGCC TGATTTCTGG CAGAAGTACA GCTTCACCTC TTCTCTTCC TTCCACATTG ATCAAGTTGT TCCGCTCTG  
TGGATGGGCA CATTGCCAGC CAGTGACACA ATGGCTTCTC TCCTCTCTC CTTCAGCATT TAAAATGTAG ACCCTCTTC  
ATTCTCCGT CTACTGCTA TGAGGCTCTG AGAAACCCTC AGGCTTTGA GGGGAAACCC TAAATCAACA AATGACCCT  
GCTATTGCT GTGAGAAGTC AAGTTATCCT GTGCTTAGG CCAAGGAACC TCACTGTGGG TTCCACAGA GGCTACCAAT  
TACATGTATC CTACTCTCG GGCTAGGGGT TGGGTGACC CTGCATGCTG TGTCCTAAC CACAAGACCC CCTTCTTCT  
TCAGTGGTCT TCTCCATGTC CTTGTACAA GGAGAAGAA AATAGTACA AATACCTGTC GCCTTGGGC TCAAGAAAA  
GAATCTGTAC CTGCTCTGCG TGTGAAAGA TGATAAGCCC ACTCTACAGC TGGAGGTAAG TGAATGCTAT GGAATGAAGC  
CCTTCTCAGC CTCTGCTAC CACTTATTC CAGACAATC ACCTTCTCCC CGCCCCATC CCTAGGAAAA GCTGGGAACA  
GGTCTATTG ACAAGTTTG CATTAAATGTA AATAAATTA ACATAATTT TAACTGCGTG CAACCTTCAA TCTGCTGCA  
GAAAAATTA TCATTTTGGC GATGTTATTA TGTCTACCA TAGTTACAAC CCAACAGAT TATATATTGT TAGGGCTGCT  
CTCATTTGAT AGACACCTTG GGAATAGAT GACTTAAAGG GTCCATTAT CACGTCCACT CCACTCCAA AATCACCAC  
ACTATCACT CCAGCTTCT CAGCAAAAGC TCTATTCCA AGTTGATGTC ATTCTAGGAC CATAAGGAAA AATACAATTA  
AAAGCCCCG GAAACTAGGT ACTTCAAGAA GCTCTAGCTT AATTTTACC CCCCCAAAA AAAAAATTC TCACCTACAT  
TATGCTCTC AGCATTTGGC ACTAAGTTT AGAAAAGAAG AAGGGCTCTT TTAATAATCA CACAGAAAGT TGGGGGCCA  
GTTACAATC AGGAGTCTGG CTCTGATCA TGTGACTGC TGTGAGTTT CTTTCTGGC CAACCAAG AACATCTTC  
CCATAGGCAT CTTGTCCCT TGCCCCACA AAATCTTCT TTCTTTTCG CTGCAGAGTG TAGATCCAA AAATTACCA  
AAGAAGAAGA TGGAAAGCG ATTTGTCTT AACAAGATAG AAATCAATA CAAGCTGGA TTTGAGTCTG CCCAGTTCCC  
CAACTGGTAC ATCAGCACCT CTCAAGCAGA AAACATGCC GTCTTCTGG GAGGGACCA AGGCGCCAG GATATAACTG  
ACTTCACCAT GCAATTTGTG TCTTCTTAA GAGAGCTGTA CCCAGAGAGT CTTGTGCTGA ATGTGGACT ATCCCTAGG  
GCTGGCAGAA AGGGAACAGA AAGGTTTTG AGTACGGCTA TAGCTGGAC TTTCTGTTG TCTACACCA TGCCCACTG  
CCTGCCTTAG GGTAGTGCTA AGAGGATCTC CTGTCATCA GCCAGGACAG TCAGTCTCT CTTTCAGGG CCAATCCCA  
GCCCTTTGT TGAGCCAGGC CTCTCTACC TCTCTACTC ACTTAAAGCC CGCTGACAG AAACCACGGC CACATTTGTT  
TCTAAGAAAC CCTCTGTCAT TCGCTCCAC ATTCTGATGA GCAACCGCTT CCCTATTTAT TTATTTATTT GTTTGTTGT  
TTTGATTAT TGGTCTAATT TATTCAAAGG GGGCAAGAAG TAGCAGTGTG TGTAAGAGAG CTAAGTTTAT AATAGCTATG  
GAATCAATTC AATTTGGACT GGTGTGCTCT CTTTAAATCA AGTCTTTAA TTAAGACTGA AATATATAA GCTCAGATTA  
TTTAAATGGG AATATTTATA AATGAGCAA TATCATACTG TTCAATGGTT CTGAAATAAA CTCACTGAA GAAAAAATA  
AAAGGGTCTC TCCTGATCAT TGAAGTCTG GATTGACACT GACAGTAAGC AAACAGGCTG TGAGAGTTCT TGGGACTAAG  
CCCACTCTC ATTGCTGAGT GCTGCAAGTA CCTAGAAATA TCCTTGGCCA CCGAAGACTA TCCTCTCAC CCATCCCTT  
TATTTCTGTT TCAACAGAA GGATATTCAG TGCACATCTG GAACAGGATC AGCTGAAGCA CTGCAGGGAG TCAGGACTGG  
TAGTAACAGC TACCATGATT TATCTATCAA TGCACCAAC ATCTGTTGAG CAAGCGCTAT GTACTAGGAG CTGGGAGTAC  
AGAGATGAG ACAGTCACAA GTCCCTCTC AGATAGGAGA GGCAGTAGT TATAAGCAGA ACAAGGTAAC ATGACAAGTA  
GAGTAAGATA GAAGAACGAA GAGGAGTAGC CAGGAAGGAG GGAGGAGAAC GACATAAGAA TCAAGCTAA  
AGGGATAAAC AGAAGATTTC CACACATGGG CTGGGCCAAT TGGGTGTCGG TTACGCTGT AATCCAGCA CTTTGGGTGG  
CAGGGGCGA AAGATCGCTT GAGCCCAGGA GTTCAAGACC AGCCTGGGCA ACATAGTGAG ACTCCATCT CTACAAAAA  
TAAATAAATA AATAAAACAA TCAGCCAGGC ATGCTGGCAT GCACCTGTAG TCCTAGCTAC TTGGGAAGCT GACACTGGAG  
GATTGCTTGA GCCCAGAAGT TCAAGACTGC AGTGAGCTTA TCCGTTGACC TGCAGGTCGA C ACAAACCTTT  
TCGAGGCAAA AAGCAAAAAA GGCTGCTCTG GGATTTCTT CAGCAACCT TCAATGCTCA AGTGCTGAA GCAGCCTAGG  
CAGAAGTACC TAAGCTCGCC AGTGAAATGA TGGCTTATA CAGTGGCAAT GAGGATGACT GTTCTTTGA AGCTGATGGC  
CCTAAACAGA TGAAGTGCTC CTTCAGGAC CTGGACCTCT GCCCTGGA TGGCGGCATC CAGCTACGAA TCTCCAGCA



CCACTACAGC AAGGGCTTCA GGCAGGCCGC GTCAGTTGTT GTGGCCATGG ACAAGCTGAG GAAGATGCTG GTTCCCTGCC  
CACAGACCTT CCAGGAGAAT GACCTGAGCA CTTCTTTCC TTTCATCTTT GAAGAAGAAC CTATCTTCTT CGACACATGG  
GATAACGAGG CTTATGTGCA CGATGCACCT GTACGATCAC TGAAGTGCAC GCTCCGGGAC TCACAGCAAA AAAGCTTGCT  
GATGTCTGGT CCATATGAAC TGAAAGCTCT GCACCTCCAG TGGAGCAACA AGTGGTGTTC TCCATGTGTT  
TTGTACAAGG AGAAGAAAGT AATGACAAAA TACCTGTGGC CTGGGCCCTC AAGGAAAAGA ATCTGTACCT TCCCTGCGTG  
TTGAAAGATG ATAAGCCAC TCTACAGCTG GAGAGTGTAG ATCCCAAAAA TTACCCAAAG AAGAAGATGG AAAAGCGATT  
TGTCTTCAAC AAGATAGAAA TCAATAACAA GCTGGAATTT GAGTCTGCCC AGTTCCCAA CTGGTACATC AGCACCTCTC  
AAGCAGAAAA CATGCCCGTC TTCTGGGAG GGACCAAAGG CGGCCAGGAT ATAAGTACT TCACCATGCA ATTTGTGTCT  
TCCTAAGAG AGCTGTACCC AGAGAGTCTT GTGCTGAATG TGGACTCAAT CCTAGGGCT GGCAGAAAGG GAACAGAAAG  
GTTTTTGAGT ACGGCTATAG CCTGGACTTT CTGTGTCTCT ACACCAATGC CCACTGCTCT GCCTTAGGGT AGTGCTAAGA  
GGATCTCTG TCCATCAGCC AGGACAGTCA GCTCTCTCT TTCAGGGCCA ATCCAGCCCC TTTTGTGTAG CCAGGCCTCT  
CTCACCTCTC TACTCACTT AAAGCCCGCC TGACAGAAAC CAGGCCACAT TTTGGTTCTA AGAAACCCCTC CTCTGTCATT  
CGTCCCCACA TTCTGATGAG CAACCGCTTC CCTATTTATT TATTTATTG TTTGTTTGT TTGATTCATT GGTCTAATTT  
ATTCAAAGGG GGCAAGAAGT AGCAGTGTCT GTAAAAGAGC CTAGTTTTTA ATAGCTATGG AATCAATTCA ATTTGGACTG  
GTGTGCTCTC TTTAAATCAA GTCCTTTAAT TAAGACTGAA AATATATAAG CTCAGATTAT TAAATGGGA ATATTATATA  
ATGAGCAAAAT ATCATACTGT TCAATGGTTC TCAAATAAAC TTAGCT CTGGCAGGAG TAGCAGCTGC CCCTTGGCGC  
GACTGCTGGA GCGCGAACT AGAGAAACAC AGACACGCTC ATCAGAGCAA CGGCGTCTCT CGGAGCGTGG AGCCCGCCAA  
GCTCGAGCTG AGCTTTTCGCT TGCCGTCCAC CACTGCCAC ACTGTCGTTT GCTGCCATCG CAGACCTGCT GCTGACTTCC  
ATCCCTCTGG ATCCGGCAAG GGCCTGCGAT TTTGACAATG TCAAGATTTA CCGTATATCC CTGTTTGTIT GGATACACCA  
GTGACGTCCA CTCTAGAAG ACAAAGTTAT ATTACTTAAA CAACCAAAGA TATGAAACTA TCCATGAAGA ACAATATTAT  
CAATACACAG CAGTCTTTTG TAACCATGCC CAATGTGATT GTACCAGATA TTGAAAAGGA AATACGAAGG ATGGAAAATG  
GAGCATGCAG CTCCTTTTCT GAGGATGATG ACAGTGCTC TACATCTGAA GAATCAGAGA ATGAAAACCC TCATGCAAGG  
GGTTCCTTTA GTTATAAGTC ACTCAGAAAG GGAGGACCAT CACAGAGGGA GCAGTACCTG CTCGTGTGCA TTGCCTTTT  
TAATGTGAAC AACAGCGACA ATAAGGACCA GGAACCAGAA GAAAAAAGA AAAAGAAAA AGAAAAGAAG  
AGCAAGTCAG ATGATAAAAA CGAAAATAAA AACGACCCAA AGAAGAAGAT GGAAAAGCGA ATGGCCAAAG  
TTCCAGACAT GTTTGAAGAC CTGAAGAACT GTTACAGTGA AATGAAGAA GACAGTTCCT CCATTGATCA TCTGTCTCTG  
AATCAGAAAT CTTCTATCA TGTAAGCTAT GGCCCACTCC ATGAAGGCTG CATGGATCAA TCTGTGTCTC TGAGTATCTC  
TGAAACCTCT AAAACATCCA AGCTTACCTT CAAGGAGAGC ATGGTGGTAG TAGCAACCAA CGGGAAGGT CTGAAGAAGA  
GACGGTTGAG TTTAAGCCAA TCCACTCTG ATGATGACCT GGAGGCCATC GCCAATGACT CAGAGGAAGA AATCAAGG  
CCTAGGTCAG CACCTTTTAG CTCTCTGAGC AATGTGAAT ACACTTTAT GAGGATCATC AAATACGAAT TCATCCTGAA  
TGACGCCCTC AATCAAAGTA TAATTCGAGC CAATGATCAG TACCTCACGG CTGCTGCATT ACATAATCTG GATGAAGCAG  
TGAAATTTGA CATGGGTGCT TATAAGTCAT CAAAGGATGA TGCTAAAATT ACCGTGATT TAAGAATCTC AAAAATCTAA  
TTGTATGTA CTGCCAAGA TGAAGACCAA CCAGTGCTGC TGAAGGAGAT GCCTGAGATA CCAAAACCA TCACAGGTAG  
TGAGACCAAA GCAAGACTAC TGGGTGTGCT TGGCAGGGGG GCCACCTCT ATCACTGACT TTGCCATCTA GGAAAACCG  
GCGTAGGTCT GGAGTCTCAC TTGTCTCACT TGTGCACTGT TGACAGTTCA TATGTACCAT GTACATGAAG AAGCTAAATC  
CTTTACTGTT AGTCATTTGC TGAGCATGTA CTGAGCCTTG TAATTCTAAA TGAATGTTA CACTCTTTGT AAGAGTGGAA  
CCAACTATA CATATAATGT TGTATTATA AGAACACCT ATATTTTGCA TAGTACCAAT CATTITAATT ATTATTCTC  
ATAACAATT TAGGAGGACC AGAGTACTG ACTATGGCTA CCAAAAGAC TCTACCCATA TTACAGATGG GCAAAATTAAG  
GCATAAGAA AAGTGAATAT ATGCACAATA GCAGTGAAG CAAGAAGCCA CAGACCTAGG ATTTCTATG TTTATTTCAA  
CTGTTTGCT TCTGCTTTA AGTTGCTGAT GAACTCTTAA TCAAAATAGCA TAAGTTTCTG GGACCTCAGT TTTATCTATT  
TCAAAATGGA GGAATAATA CTAAGCCTT CTGCGGCAA CAGTTTTTA TGCTAATCAG GGAGGTCATT TTGGTAAAT  
ACTTCTCGAA GCGAGCCTC AAGATGAAGG CAAAGCACGA AATGTTATT TTTAATTATT ATTTATATAT GTATTTATAA  
ATATATTATA GATAATTATA ATATACTATA TTATGGGAA CCCCTTCATC CTCTGAGTG GACCAGGCAT CCTCCACAAT  
AGCAGACAGT GTTTCTGGG ATAAGTAAGT TTGATTTCAT TAATACAGGG CATTITGGTC CAAGTTGTGC TTATCCCAT  
GCCAGGAAAT TCTGCATTCT AGTACTTGGG AGACCTGTAA TCATATAATA AATGTACATT AATTACCTTG AGCCAGTAAT  
TGGTCCGATC TTTGACTCT TTGCCATTA ACTTACTGG GCATTCTGT TCACTTCAAT TCCACTGCA ATCAAGTCTC  
ACAAGCTAAA ATTAGATGAA CTCAACTTTG ACAACCATAG ACCACTGTTA TCAAACTTT CTTTCTGGA ATGTAATCAA  
TGTTTCTCT AGGTTCTAAA AATTGTGATC AGACCATAAT GTTACATTAT TATCAACAAT AGTGATTGAT AGAGTGTAT  
CAGTCATAAC TAAATAAAGC TTGCAAGTGA GGGAGTCATT TCATTGGCGT TTGAGTCAGC AAAGAAGTCA AG  
AGCTGCCAGC CAGAGAGGGA GTCATTTTAT TGGCGTTTGA GTCAGCAAAG AAGTCAAGAT GGCCAAAGTT CCAGACATGT  
TTGAAGACCT GAAGAACTGT TACAGTGAAG ATGAAGAAGA CAGTTCCTCC ATTGATCATC TGTCTCTGAA TCAGAAATCC  
TTCTATCATG TAAGCTATGG CCCACTCCAT GAAGGCTGCA TGGATCAATC TGTGTCTCTG AGTATCTCTG AAACCTTAA  
AACATCCAAG CTACCTTCA AGGAGAGCAT GGTGGTAGTA GCAACCAACG GGAAGGTTCT GAAGAAGAGA CGGTGTAGTT  
TAAGCCAATC CATCACTGAT GATGACCTGG AGGCCATCGC CAATGACTCA GAGGAAGAAA TCATCAAGCC TAGGTATCA  
CCTTTTAGCT TCCTGAGCAA TGTGAAATAC AACTTTATGA GGATCATCAA ATACGAATTC ATCTGAATG ACGCCCTCAA  
TCAAAGTATA ATTCGAGCCA ATGATCAGTA CCTCACGGCT GCTGCATTAC ATAATCTGGA TGAAGCAGTG AAATTTGACA  
TGGGTGCTTA TAAGTCATCA AAGGATGATG CTAAGATTAC CGTGATTCTA AGAATCTCAA AAATCAATT GTATGTGACT  
GCCAAGATG AAGACCAACC AGTGCTGCTG AAGGAGATGC CTGAGATACC CAAACCATC ACAGTAGTG AGACCAACCT  
CCTCTCTTC TGGGAACTC ACGGCACTAA GAACTATTTC ACATCAGTTG CCCATCCAAA CTGTTTATT GCCACAAAGC  
AAGACTACTG GGTGTGCTTG GCAGGGGGGC CACCCTCTAT CACTGACTTT CAGATACTGG AAAACCAAGC GTAGGTCTGG  
AGTCTCACTT GTCTCACTG TGCACTGTTG ACAGTTCATA TGTACCATGT ACATGAAGAA GCTAAATCCT TTAAGTTAG  
TCATTTGCTG AGCATGACT GAGCCTTGTA ATTCTAAATG AATGTTTACA CTCTTGTA GAGTGAAGC AACACTAACA  
TATAATGTT TATTATAAG AACACCTAT ATTTGCTA GTACCAATCA TTTAATTAT TATCTTCAT AACATTTA  
GGAGGACAG AGCTACTGAC TATGGCTACC AAAAGACTC TACCATAAT ACAGATGGG AAATAAGGC ATAAGAAAA  
TAAGAAATAG GCACCAATAG AGTCGAAACA AGAAGCCACA GACCTAGGAT TTCATGATTT CATTTCAGCT GTTGCCTTC  
TGCTTTAAG TTGCTGATGA ACTCTTAATC AAATAGCATA AGTTTCTGGG ACCTCAGTTT TATCATTTT AAAATGGAGG  
GAATAATACC TAAGCCTTCC TGCCGCAACA GTTTTTATG CTAATCAGG AGGTCATTTT GGTAAAATAC TTCTCGAAGC  
CGAGCCTCAA GATGAAGGCA AAGCACGAAA TGTTATTTT TAATTATTAT TTATATATGT ATTTATAAT ATATTAAAG

TAATTATAAT ATACTATATT TATGGGAACC CCTTCATCCT CTGAGTGTGA CCAGGCATCC TCCACAATAG CAGACAGTGT  
TTTCTGGGAT AAGTAAGTTT GATTTTCATTA ATACAGGGCA TTTTGGTCCA AGTTGTGCTT ATCCCATAGC CAGGAAACTC  
TGCATTCTAG TACTTGGGAG ACCTGTAATC ATATAATAAA TGTACATTA TTACCTTGAG CCAGTAATTG GTCCGATCTT  
TGACTCTTTT GCCATTAAAC TTACCTGGGC ATTCTGTGTTT CATTCAATTC CACCTGCAAT CAAGTCTAC AAGTAAAAAT  
TAGATGAACT CAACCTTTGAC AACCATGAGA CCACTGTIAT CAAAACCTTC TTTTCTGGAA TGTAAATCAAT GTTCTTCTA  
GGTCTAAAA ATTGTGATCA GACCATAATG TTACATTATT ATCAACAATA GTGATTGATA GAGTGTATC AGTCATAACT  
AAATAAAGCT TGCAACAAAA TTCTCTG GCTCAGGGCA CATGCCTCCC CTCCCCAGGC CGCGGCCAG CTGACCCTCG  
GGGCTCCCC GGCAGCGGAC AGGGAAGGGT TAAAGGCCCC CGGCTCCCTG CCCCCTGCCC TGGGGAACCC CTGGCCCTGT  
GGGGACATGA ACTGTGTTTG CCGCTGGTC CTGGTCTGTC TGAGCCTGTG GCCAGATACA GCTGTGCCCC CTGGGCCACC  
ACCTGGCCCC CTTGAGTTT CCCCAGACCC TCGGGCCGAG CTGGACAGCA CCGTGCTCCT GACCCGCTCT CTCTGGCGG  
ACACGCGGA GCTGGCTGCA CAGCTGAGGG ACAAATTCCT AGCTGACGGG GACCACAACC TGGATTCCCT GCCCACCTG  
GCCATGAGTG CGGGGGCACT GGGAGCTCTA CAGCTCCAG GTGTGCTGAC AAGGCTGCGA GCGGACCTAC TGTCTACTCT  
GCGGCACGTG CAGTGGCTGC GCCGGGCAGG TGGCTCTTCC CTGAAGACCC TGGAGCCCGA GCTGGGCACC CTGCAGGCC  
GACTGGACCG GCTGCTGCGC CGCTGCGAGC TCCTGATGTC CCGCTGGCC CTGCCCCAGC CACCCCGGA CCGCCGGCG  
CCCCCGTGG CGCCCCCTC CTCAGCCTGG GGGGGCATCA GGGCCGCCA CGCCATCCTG GGGGGGCTGC ACCTGACACT  
TGACTGGGC GTGAGGGGAC TGCTGCTGCT GAAGACTCGG CTGTGACCG GGGCCCAAAG CCACCACCT CTCTCAAAG  
CCAGATCTTA TTTATTTATT TATTTAGTA CTGGGGCGA AACAGCCAGG TGATCCCCC GCCATTATCT CCCCCTAGTT  
AGAGACAGTC CTTCCGTGAG GCCTGGGGGA CATCTGTGCC TTATTTATAC TTATTTATT CAGGAGCAGG GGTGGGAGG  
AGGTGAGTC CTGGGTCCCC GAGGAGGAGG GAGTGGGGT CCGGATTCT TGGGTCTCCA AGAAGTCTGT CCACAGACTT  
CTGCCTGGC TCTTCCCAT CTAGGCCTGG GCAGGAACAT ATATTATTA TTTAAGCAAT TACTTTTCAT GTTGGGGTGG  
GGACGGAGG GAAAGGGAAG CTTGGGTTTT TGTACAAAAA TGTGAGAAAC CTTGTGAGA CAGAGAACAG GGAATTAAT  
GTGTCATACA TATCC CAGCTGCGGC ATCTCTGTC TCAGAGTCTT GGTGTCTCT TTCCTTCCC CTGCGGGTCT  
CCCTGGGTCT CCCAAGTCC CTCTGTGT CTCTCTCCG CTCTGTATC TCTGACTCC AGAACCCTC CTCTGTCTC  
CAGGGCTGCC CTTCTGATCC TCTTGTCTC TCTGGTGTGT CTCTCTGGCT GCCTCCATCT CTGTGGATCT CCGTCTCCCT  
GTCTGTGTCT CAGTGTGTCT TCACTCTGT GTGTGTGTGT GTCTCTCTCT CTCTCTCTCC TTCCCTTCCA CTCCCTCTC  
CTCTGCCTC CACCTCTCCA GGGCCCTGTC TTGTCCCTCC GTCCGGCCTT TCTGTGCTT TCCGTCTCTC TGCTCCCA  
TCTCTCTCTG CTAGTCTGT CCAGCCGGAC CCCCACCCAC AGTCGGGGCC CAGCGCTTGA GCCTGAGTGT CTGCTCCGGC  
CCGTGGAGGT GGAGGGAGG GAGGCCAATG ACCTACCAG CCCCTCTCCG ACCACCCCCC CTTTCCCTT TCAACTTTT  
CAAATTTTCT CTTCCGTGCC CTCTCCGAG CGCGCGGGG TGAGCCCTGC AAGGCAGCG CTCCGTCTGA ATGGAAGAGG  
CAGGCAGGA GCTGTGATCA GGATGTGTCA GCGCGGCCCT CCCTCGCCG CTGCCCCCG CCGCCCCCG CAGGCCCGC  
TATATAACCC CCCAGGCGTC CACTCTCCCT CACTGCCCG GGCCTGTCT CTCAGGGCAC ATGCTCTCCC TCCCCAGCG  
CGGGCCAGC TGACCCTCGG GGCTCCCCG GCAGCGGACA GGAAGGGTT AAAGGCCCCC GGCTCCCTGC CCCCTGCCCT  
GGGGAACCC TGGCCCTGTG GGGACATGAA CTGTAAGTTG GTTCATGGGG AGGGTGGAGG GGACAGGGAG GCAGGGAGGA  
GAGGGACCA CGCGGGGGT GGGAGCAGC CCGCTGAGT CGCACAGAGA GGGACCCGA GACAGGCAGC  
CGGGAGGAG AGCAGCTTCG GAGACAGGAG GCGGGGAGG AGATGGGAG AGAGAGAC AGACAGGAGC  
GGATGGAGG AGCCAATCAG AGCGCCGCA GAGGGACCG GCCAGACAG GCGGAGGAG AGCGAGACG  
GAGACCGAG AGGGGAGG ACGCAGGGAC TGGTGCCGG AGGGAGGTGA CCCCCATGA CCCAGGCCCC AGGGAGCCCG  
CGGGACCGG GAGACTCCCT GGGATTCCGG CAGAGAGGCT CCGGAGGGA ACTGAGGAG GGTCCCGGA GAGCGGAGCA  
AGCCAGGGAG TAGCGACCC AGCCGGGGG AGGAGAGAGA CTGGGCGCCG GGGGAAAGCG GGGAGAGCCG  
GGCAGATGG GCGGACGGAG GCGCGGACAG ACCGACGGT GCGGGGCCG GGGGGCGGG TGGGGGTGTG  
CGAGGCGGG GCGCGGGGG AGCGTGATT GGCTGGGGG TGGCGGGTG GCGGGGGCG CCGGGGTGG CTGCGGGGAG  
CGAGCTCCG ACCCCGCGC CCGCGGGCC CCGCGGCC CCGCGGCCA GCTCTCCCG TCCCGGCGC CGCGGGGGC  
ATGGCTCTG CCTCTCCG CCAGGTGCGC TCGGGCCCG GCTTCTGCG CCCACCCGGC GGGCTCTGG GAGGGCGTCT  
AAGGGGTCT CCGTGGGAGA GTCCGTGTC TCCGGACTC CGTCTGGG TTTTGGCTCC TTCCCTGCT CCCAGCCAGC  
TCGGGCTCC GCGGCCGGG GAGGGGGCAG GTTCTGGCT GTGCTCCCC CACCATCCG CCCCCGGGC CCAGATTCCG  
GCGTCCGGG GCGGACGGGA GACGCCCGG CCGGTCTGCT TCCGACGGG GGGGACGCA GAGCCAGGA  
GGGAGAGGA AGCCCGCTG GCCCTGCGAC CTGCCCGGG GCGTTCACC CTGGGACTTA AGACCTCCAG CTCCATCTC  
CCTAAGGCCG GGAGTCCAG CCCCAGACC TCCTCCCGA GAGGAGGAG TCCAGACCC AGGCCTTCT CCTCAGAC  
TAGGAGTCCA GGGCCCCAG CTCTCTCC TCAGACCCAG GAGGAGTCCA GACCCAGTT CCTCTCCCT CAGACCGGG  
AGTCCAGCC AGGCCCTCT CTCTCAGACC CGGAGTCCAG CTTGAGCTCT CTGCTTATC CTGCCCCAG GTGTTTGGC  
CCTGGTCTG GTCTGTCTGA GCCTGTGGC AGATACAGT GTGCCCCCTG GGCCACCACC TGGCCCCCT CAGTTTCCC  
CAGACCTCG GGCCGAGCTG GACAGACCG TGCTCTGAC CCGCTCTCT CTGGCGGACA CGCGGACGT GCCTGCACAG  
CTGGTAGGAG AGACTGGGT GGGGCCAGCA CAGGAGTGA AGGCAGAGAG GAACGGAGAG GAGTCTGCG GCAGCCACTT  
GGAGGGGTT TGGGTCTCA GGTGGCAGAG TGAGGGAGG GAAGAGTTG GGGCTGGCG TGGGGATG AGGAGACCC  
GAGGTGGG AGGGGCCACC TCACAGCTT TTTCCCTGCC AGAGGGACAA ATTCCAGCT GACGGGGACC ACAACCTGGA  
TTCCCTGCC ACCCTGGCCA TGAGTGCAGG GCACTGGGA GCTCTACAG TAAGGGCAAG GGAGTGGGT GGGGACAAGG  
TGGGAGGAG CAGTGAAG GGGCGGGGAG GATGAGGGG ACTGGTCGG GTTCTCTGA TGTCCGGCT CTATCCCCAG  
CTCCAGGTG TGCTGACAAG GCTGCGAGCG GACCTACTGT CTTACTGCG GCAGTGCAG TGGTGCGCC GGGCAGGTG  
CTCTTCCCTG AAGACCTTG AGCCGAGCT GGGCACCTG CAGGCCGAC TGGACCGGT GCTGCGCGG CTGCAGTCC  
TGGTATGTC TGGCCCCAG ACCTGACACC CCAGACCC CCCCCTGGCC CAAAATCCT GTGGCTGAG TCCTTGAAGC  
CTGAGACCC AGACCGAGT GCAACAGCCC CGCTGAGA CTTGACACC CTAACAGCCC CTCTGAGAC CTTGACACG  
TAACAGCCC GCTCTGAGC CTGACCTA ACAGTCTGC TGTGAGACC TGACCTGCA GTCCCAAGAT CTTGTGGCC  
TGAGACCTG AGGCCCTAGA CCCCCAATC CTGCCAGAA ACTTCAAAT CTCACCAAG ACCCTGAGAC TCCATCATC  
ATGACCTCA AGTCCCCAGA TCCAGCCCC TAAGACCAA GACCCATCC TGAAGCCAA AGCCTGAGA ATTCAAATC  
TCACCTCAAG ACTTGAGAG CTTGGCCCCA TGACATTGAA AACCATGGAC CTGGCCAGG GTGGTGGCTC ACGCTGTAA  
TCCCAGACT TTTGGAGGCC GAGGCAAGT GATCACTGA GGTCCGGAGT TCAAGACCAG CCAGACCAAC ATGGTGAAC  
CCTGTCTCTA TAAAAATAC AAAATTAGCC AGGCGTGGT GTGCACTGCT GTAATCCAG CTACTGGGA GGTGAGCA  
GGAGAATCG TTAACCTGG GAGGCGGAG TTGCAGTGAG CCGAGATCG ACCATTACAC TCCAGCTGG GCAACAAGAG  
CAAACTCCC TCTCTCTCA AAAAAAAAAA AAAAAAAAAA AAGAAGGAAA AGAAACCAT GGACCTCCAG ACCCTGAGAC

CCCAGGCCCC AGCCCTGAGA TCCTGACATC TTAAAGATCC CAGGCCCTAA GATACAAGAC CTGACCCAA AGCCAGCCTT  
 GGGACCCTGG CTGTACAAAC CCAAGACCTC CAGGACCTAG ACCCCGAGCC CTGAGGCCCT ATGTCTCACT CCCAACATCG  
 AAAACCCTGA CACCTCAGAT CTTGAGCCTG CGCCTGTACG ACTCCAAGAC CCTCACTTCC AAAGCCAGGC CCAAGGCCCT  
 GAGACCAGAA GACTTCAAAC CTTGGTTCTT GGGCCTAAGT CCAAGAGACC TGGATCTCAA ATTCCAATT CTAGCTCTGA  
 GACTCCAGCC CTCACCATG AGTTCTGAA CTGAAACCCA GAGACCCCAT CTCTAAGACT TCAGCTTGA GTCCAGGGC  
 CTGACCCTAG ACTCGAGCCC ACAGACCTCA GATACTGTCT GTAAAAACCC AGCTCTGGTG GGGAGCAGTG GCTCACTCT  
 GTAATCCCAA GGCAGGGGAG GCCAAGGCAG AAGGACCTCT TGAGGCCATG AGTTTGAGAC AGCCTGGGCA GCATAGCAAG  
 ACTCTGTTTC TTAATTATTA TTATTATTAT TATTTTTTGG AGACAGAGTC TCGCCTCTG TTGCCAGGC TAGAGTGCAA  
 TGGTGCCATT TCGGCTTGCT GGAACCTCCG CCTCTGGGC TCAAGCGATT CTCCTGCCCT AGCCTCCTGA GTAGCTGGGA  
 CTTCAAGGTG AACTTGCCAC ACCCGGATAA TTTTTTGT TTTTAGTAGA CACAGGGTTT CACCGTGTG CCCAGGCTGG  
 TCACAAATC CTGAGCTCAG GCCATCCGCC CTTCTCGGC TCCCAAAGCG CTGGGATAAC AGGCGTGACG CCGCGCTGG  
 CTTCTTAATT GTTCTAACAG CAGCGACAAC AACAAAAACC CAGCTCTGAG ATTCCAGCCC CGGCGACTCT AACAGTCCCA  
 GGGCCGATCC CTCACCTAGA ACCGAGATGC CAGCCCTGAC TCCACAGACT TCACCCCAA CCCCCACACT CAGCTCTGGA  
 AGCCCGTCTT GACTCCAGCC TCCATTTTCG GAACCCACA GCCTGAAGAG CTCCCGGCTT AAACACTTCA CCCCACGCGC  
 CACAGTCCCC CTGTGAATAT GCAGCCCCGA TTCAGCTGCA GCTCCACAGC ACCCTGCCCC TGACCCCCCG CTGACCCCCC  
 TACCTGTGAC TCACCTCTCT CCTCTCCCCA CAGATGTCCC GCCTGGCCCT GCCCAGCCA CCCCCGACC CGCCGGCGCC  
 CCGCTGGCG CCCCCCTCT CAGCCTGGGG GGGCATCAGG GCGGCCACG CCATCCTGGG GGGGCTGCAC CTGACACTTG  
 ACTGGGCCGT GAGGGGACTG CTGCTGCTGA AGACTCGGT GTGACCCGGG GCCCAAAGCC ACCACCGTCC TCCCAAAGCC  
 AGATCTTATT TATTTATTTA TTTCAGTACT GGGGGCGAAA CAGCCAGGTG ATCCCCCGC CATTATCTCC CCCTAGTTAG  
 AGACAGTCTT TCCGTGAGGC CTGGGGGGCA TCTGTGCTT ATTTATACTT ATTTATTCA GGAGCAGGGG TGGGAGGCAG  
 GTGGACTCCT GGGTCCCCGA GGAGGAGGGG ACTGGGGTCC CGGATTCTTG GGTCTCCAAG AAGTCTGTCC ACAGACTTCT  
 GCCCTGGCT TCCCCATCT AGGCTGGGC AGGAACATAT ATTATTTATT TAAGCAATTA CTTTTCATGT TGGGGTGGGG  
 ACGGAGGGGA AAGGGAAGCC TGGGTTTTG TACAAAAATG TGAGAAACCT TTGTAGACA GAGAACAGGG AATTAATGT  
 GTCATACATA TCCACTTGAG GGCATTGTT CTGAGACTG GGGCTGGATG CTTGGGTAACT TGGGCAAGGG CAGGTGGAGG  
 GGAGACCTCC ATTCAAGGTG AGGTCCCGAG TGGGCGGGG AGCGACTGGG AGATGGGTG GTACCCAGA CAGCTCTGTG  
 GAGGCAGGGT CTGAGCCTTG CTTGGGGCCC CGCACTGCAT AGGGCCGTTT GTTTGTTTTT TGAGATGGAG TCTCGCTCTG  
 TTGCTAGGC TGGAGTGCAG TGAGGCAATC TAAGGTCACT GCAACCTCCA CCTCCGGGT TCAAGCAATT CTCTGCCTC  
 AGCCTCCGA TTAGCTGGGA TCACAGGTGT GCACCACCAT GCCCAGCTAA TTATTTATT CTTTGTATT TTAGTAGAG  
 ACAGGTTTC ACATGTTGG CCAGGCTGTG TTCGAATCTC TGACCTCAGG TGATCTCTCT GCCTCGGCTT CCAAAGTGC  
 TGGGATTACA GGTGTGAGCC ACCACACCTG ACCCATAGGT CTTCAATAAA TATTTAATGG AAGGTTCCAC AAGTCAACCT  
 GTGATCAACA GTACCCGTAT GGGACAAAGC TGCAAGGTCA AGATGGTTCA TTATGGCTGT GTTACACATA GCAAACCTGGA  
 AACAACTAG ATATCCAACA GTGAGGGTTA AGCAACATGG TGCATCTGTG GATAGAAGCG CACCCAGCCG CCGGAGCAG  
 GGACTGTCTA TCAGGGAGGC TAAGGAGAGA GGCTTCTTG GGATATAGAA AGATATCTG ACATTGGCCA GGCATGGTGG  
 CTCACGCTG TAATCTGGC ACTTTGGGAG GACGAAGCGA GTGGATCACT GAAGTCCAAG AGTTTGAGAC CGGCCTGCGA  
 GACATGGCAA AACCTGTCT CAAAAAAGAA AGAATGATGT CTTGACATGA AACAGCAGG TACAAAACCA CTGATCTGTG  
 TGATCCCAAT TTGTGTTTT TCTTCTATA TATGGATTAA AACAAAAATC CTAAAGGGAA ATACGCCAAA AGTTGACAA  
 TGACTGTCTC CAGGTCAAAG GAGAGAGGTG GGATTGTGGG TGACTTTTAA TGTGTATGAT TGTCTGTATT TTACAGAATT  
 TCTGCCATGA CTGTGATTT TGCATGACAC ATTTTAAAAA TAATAAACAC TATTTTGA ATAACAGAAT ATCAGCCTCC  
 TCCTCTCAA AAATAAGCCC TCAGGAGGGG ACAAAGTTGA CCGCTGATTG AGCCTGTCAG GGCTGTGCAC-3' (SEQ. ID  
 NO:2411)

#### Human Adenosine A<sub>1</sub> Receptor Nucleic Acid and Antisense Oligonucleotide Fragments

5'-ATGCCGCCCT CCATCTCAGC TTTCCAGGCC CCTACATCG GCATCAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA  
 CGTGCTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CCTTCTGCTT CATCGTCTCG TTGGCGGTGG  
 CTGATGTGGC CTGGGGTGCC CTGGTCATCC CCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC  
 CTCATGGTTG CTTGTCCGGT CCTATCCTC ACCCAGAGCT CCATCCTGGC CTTGCTGGCA ATTGCTGTGG ACCGCTACCT  
 CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCGCGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC  
 TCTCTTCGT GGTGGGACTG CCCCTATGT TTGGCTGGA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC  
 AGCATGGGG AGCCCGTGAT CAAGTGGGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTGT  
 GTGGGTGCTG CCCCCGCTT TCCTCATGGT CCTCATCTAC CTGAGGTCT TCTACCTAAT CCGCAAGCAG CTCACAAGA  
 AGGTGTGGC CTCTCCGGC GACCCGAGA AGTACTATG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCTC  
 TTCTCTTTG CCTCAGCTG GCTGCCCTTG CACATCTCA ACTGCATCAC CCTTCTGTC CCGTCTGCC ACAAGCCAG  
 CATCTTACC TACATTGCCA TCTTCTCAC GCACGGCAAC TCGGCCATGA ACCCATTTGT CTATGCCCTC CGCATCCAGA  
 AGTTCCGCGT CACCTTCTT AAGATTTGGA ATGACCATT CCGTGGCCAG CTTGCACCTC CCATTGACGA GGATCTCCA  
 GAAGAGAGGC CTGATGACTA G ATGAGTGTC AAGTGTGAA GGGTGCTGT TCTGAATCCC AGAGCTCTCT CTCCCTCTGT  
 GAGGCTGGCA GGTGAGGAAG GGTTAACCT CAGTGAAG AATCCCTGGA GCTAGCGGT GCTGAAGGC TCGAGGTGTG  
 GGGCACTTG GACAGAACAG TCAGGCAGCC GGGAGCTCTG CCAGCTTTGG TGACCTTGG CCGGCTGGG AGCGTGGCG  
 CGGGAGCCG AGGACTATGA GCTGCCGCG GTTGTCAGA GCCCAGCCA GCCCTACGCG CGCGGCCCG AGCTCTGTT  
 CCTGGAATT TGGGCACTG CTCTGGGACC CTTGCCGGC AGCAGGCAG ATGGTGCTT CCTGTGCCC CTGGTGCCC  
 GTCTGTGAT GTGCCAGCC TGTGCCCGC ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCTACATCG GCATCAGGT  
 GCTCATCGCC CTGGTCTCTG TGCCCGGAA CGTGCTGGT ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA  
 CCTTCTGCTT CATCGTGTG CTGGCGGTG CTGATGTGG CGTGGGTGCC CTGGTCATCC CCTCGCCAT CCTCATCAAC  
 ATTGGGCCAC AGACCTACTT CCACACCTGC CTATGTGTT CTTGCTCGGT CCTATCCTC ACCCAGACT CCACTTGGC  
 CTTGCTGGCA ATTGCTGTG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCGCGAGGG  
 CGGCGGTGGC CATAGCCGGC TGCTGGATCC TCTCTTCGT GGTGGGACTG ACCCTATGT TTGGCTGGA CAATCTGAGT  
 GCGGTGGAG GGGCCTGGG AGCCAACGGC AGCATGGGG AGCCCGTGT CAAGTGGGAG TTCGAGAAGG TCATCAGCAT  
 GGAGTACATG GTCTACTTCA ACTTCTTGT GTGGGTGCTG CCCCCGCTT TCCTCATGGT CCTCATCTAC CTGGAGGTCT  
 TACTACCTAAT CCGCAAGCAG CTCACAAGA AGGTGTGGC CTCTCCGGC GACCCGAGA AGTACTATG GAAGGAGCTG  
 AAGATCGCA AGTCGCTGGC CCTATCCTC TTCTCTTTG CCTCAGCTG GCTGCCCTT CACATCTCA ACTGCATCAC  
 CCTTCTGTC CCGTCTGCC ACAAGCCAG CATCTTACC TACATTGCCA TCTTCTCAC GCACGGCAAC TCGGCCATGA

ACCCATTGT CTATGCCTTC CGCATCCAGA AGTTCGCGT CACCTTCCTT AAGATTTGGA ATGACCATTT CCGCTGCCAG  
CCTGCACCTC CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA GACCCCGCT TCCGCTCCCA CCAGCCACA  
TCCAGTGGG TCTCAGTCCA GTCTTCACAT GCGCGTGT CCAGGGGTCT CCCTGAGCCT GCGCCAGCTG GGCTGTTGGC  
TGGGGGCATG GGGGAGGCTC TGAAGAGATA CCCACAGAGT GTGGTCCCTC CACTAGGAGT TAACATCCCT ACACCTCTGG  
GCCCTGCAGG AGGCGTGGGA GGGCAAGGGT CCTACGGAGG GACCAAGGTG CTAGAGGCCAA CAGTGTCTGT AGCCCCACC  
TGCTGACCA TCCCATGAGC AGTCCAGCGC TTCAGGGCTG GGCAGGTCT GGGGAGGCTG AGACTGCAGA GGAGCCACCT  
GGGCTGGGAG AAGGTGCTTG GGCTTCTGCG GTGAGGCAGG GGAGTCTGCT TGTCTTAGAT GTTGGTGGTG CAGCCCCAGG  
ACCAAGCTTA AGGAGAGGAG AGCATCTGCT CTGAGACGGA TGAAGGAGA GAGGTGAGG ATGCACTGGC CTGTTCTGTA  
GGAGAGACTG GCCAGAGGCA GCTAAGGGGC AGGAATCAAG GAGCCTCCGT TCCCACCTCT GAGGACTCTG GACCCACGGC  
CATACCAGGT GCTAGGGTGC CTGCTCTCCT TGCCCTGGG CAGCCACGGA TTGTACGTGG GAGAGGCAGA AAGGGTAGGT  
TCAGTTAATCA TTTCTGATGA TTTGCTGGAG TGTGGCTCC AGCCCTGGG GAGTGAAGT GGTGCGGTAG GTGCTGGCCT  
CAACAGCCA CGAGGTGGTA GCTCTGAGCC CTCCTTCTTG CCCTGAGCTT TCCGGGGAGG AGCCTGGAAGT GTAAATACCT  
GTCATCTGGG CCACCAGCTC CACTGGCCCC CGTTGCCGGG CCTGGACTGT CCTAGGTGAC CCCATCTCTG CTGCTTCTGG  
GCCTGATGGA GAGGAGAACA CTAGACATGC CAACTCGGGA GCATTCTGCC TGCTGGGAA CGGGGTGGAC GAGGGAGTGT  
CTGTAAGGAC TCAGTGTGA CTGTAGGCGC CCCTGGGGTG GGTTTAGCAG GCTGCAGCAG GCAGAGGAGG AGTACCCCCC  
TGAGAGCATG TGGGGGAAGG CCTTGCTGTC ATGTGAATCC CTCAATACCC CTAGTATCTG GCTGGGTTTT CAGGGGCTTT  
GGAACTCTG TTGCAGGTGT CCGGGGTCT AGGACTTAG GGATCTGGGA TCTGGGGAAG GACCAACCCA TGCCCTGCCA  
AGCCTGGAGC CCCTGTGTTG GGGGGCAAGG TGGGGAGCC TGGAGCCCT GTGTGGGAG GCGAGGCGGG GGAGCTGGGA  
GCCCCTGTGT GGGAGGGCGA GCGGGGGAT CCTGGAGCCC CTGTGTCGGG GGGCGAGGGA GGGGAGGTGG CCGTGGTTG  
ACCTTCTGAA CATGAGTGT AACTCCAGGA CTGCTTCCA AGCCCTTCCC TCTGTTGAA ATTGGGTGT CCCTGGCTCC  
CAAGGGAGGC CCATGTGACT AATAAAAAAC TGTGAACCCT CGCATTTGTG TTTAATAAA AGAATCTGGA AGATAAATAG  
TCTGAAGAG AGACAAAGGA AGGAAATTT AAATCCTTAG ATTCAAGCAG AAGAATTCCTA TGTGGAAGT TTGGGTGTT  
GTTGTTGTT TTTGGTGTG TTTTGTGTT TTTGTTTTT TGTTTTTT TGAGATGGAG TCTCGCTGTG TTACCGGGAG  
CGACAGAGCC GCACGGCGA GTCGAGTCCC AGCCAGCTAC CATCCCTCTG GAGCTTACC GCGGCTCTG GCTTCCACG  
GAATCCCTGG AGCTAGCGGC TGCTGAAGGC GTCGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCAGC CGGGAGCTCT  
GCCAGCTTTG GTGACCTTG GTGCTTGCT CGTGCCCTT GGTGCCCGTC TGCTGATGTG CCCAGCCTGT GCGGCGCATG  
CCGCCCTCA TCTCAGCTT CCAGGCGGCC TACATCGGCA TCGAGGTGCT CATCGCCCTG GTCTCTGTGC CCGGGAACGT  
GCTGGTGATC TGGGCGGTGA AGGTGAACCA GCGCTGCGG GATGCCACCT TCTGCTTCAT CGTGTGCTG GCGGTGGCTG  
ATGTGGCCGT GGGTGCCCTG GTCATCCCC TCGCACTCT CATCAACATT GGGCCACAGA CTACTTCCA CACTGCTCTC  
ATGGTTGCT GTCCGCTCT CATCTCACC CAGAGCTCCA TCTGGCCCT GCTGGCAATT GCTGTGGACC GTACCTCCG  
GGTCAAGATC CCTCTCCGT ACAAGATGGT GGTGACCCCG CGGAGGGCGG CGGTGGCCAT AGCCGGCTGC TGGATCCTCT  
CCTTCGTGGT GGGACTGACC CCTATGTTG GCTGGAACAA TCTGAGTGG GTGGAGCGGG CCTGGGCAGC CAACGGCAGC  
ATGGGGGAGC CCGTGATCAA GTGCGAGTTC GAGAAGGTCA TCAGCATGGA GTACATGGTC TACTTCACT TCTTGTGTG  
GGTGCTGCC CCGCTTCTC TCATGGTCT CATCTACCTG GAGGTCTTCT ACCTAATCCG CAAGCAGCTC AACAAGAAGG  
TGTCGGCCTC CTCGGCGAC CCGCAGAAGT ACTATGGGAA GGAGCTGAAG ATCGCAAAGT CGCTGGCCCT CATCTCTC  
CTCTTGCC CTAAGTGGCT GCCTTTCAC ATCCTCACT CAGTACCCT CTCTGCCC CTCTGCCA AGCCAGCAT  
CCTTACCTAC ATTGCCATCT TCCTCAGCA CCGCAACTCG GCCATGAACC CCATTGTCTA TGCTTCCG ATCCAGAAGT  
TCCGCGTAC CTCTCTAAG ATTTGGAATG ACCATTTCG CTGCCAGCT GCACCTCCA TTGACGAGGA TCTCCAGAA  
GAGAGGCCCTG ATGACTAGAC CCGCCTTCC GCTCCACCG CCCACATCCA GTGGGTCTC AGTCCAGTCC TCACATGCC  
GCTGTCCAG GGGTCTCCCT GAGCCTGCC CAGCTGGGT GTTGGCTGG GGCATGGGG AGGCTCTGAA GAGATACCA  
CAGAGTGTG TCCCTCCACT AGGAGTTAAC TACCCTACAC CTCTGGGCC TGCAGGAGG CTGGGAGGGC AAGGGTCTA  
CGGAGGACC AGGTGCTAG AGGCAACAGT GTTCTGAGCC CCCACTGCC TGACCATCC ATGAGCAGT CAGAGCTTCA  
GGGCTGGGCA GGTCTGGGG AGGCTGAGAC TGGAGGAG CACCTGGG TGGGAGAAG TGCTTGGCT TGTGCGTGA  
GGCAGGGGAG TGTGCTGTG TTAGATGTTG GTGGTGCAGC CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TGTGCTGTA  
GACGGATGGA AGGAGAGAGG TTGAGGATGC ACTGGCTGT TGTGAGGAG AGACTGGCCA GA GAT GGA GGG CGG CAT  
GGC GGG G CGG GTC GCC GG GGC GGG CBC BGG C GGC GGG CBC GC GGC CTG G GGB GGG CGG C GBT GGB GGG  
GG CTG GGC GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC ATGCCGCCCT  
CCATCTCAG TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGC CTGGTCTCTG TGCCCGGGA CGTGTGGTG  
ATCTGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CTTCTGCTT CATCGTCTG CTGGCGGTGG CTGATGTGGC  
CGTGGGTGCC CTGGTCACT CCCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC CTGATGGTTG  
CCTGTCCGT CCTCATCTC ACCCAGAGCT CCATCCTGGC CTGCTGGCA ATTGCTGTG ACCGCTACCT CCGGGTCAAG  
ATCCCTCTC GGTACAAGAT GGTGGTGACC CCGGAGGG CGGCGGTGG CATAGCCGGG TGCTGGATCC TCTCTCTGT  
GGTGGGACTG ACCCTATGT TTGGCTGGA CAATCTGAGT GCGGTGGAG GGGCTGGG AGCCAACGGC AGCATGGGG  
AGCCCGTAT CAAGTGGAG TTCGAGAAG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTGT GTGGGTGCTG  
CCCCCGCTT TCTCATGCT CCTCATCTAC CTGGAGTCT TCACTTAAT CCGCAAGCAG CTCACAAAGA AGGTGTCGGC  
CTCTCCGGC GACCCGAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCTC TTCCTTTG  
CCCTCAGCTG GCTGCCTTG CACATCTCA ACTGCATCAC CCTTCTG CCGTCTGCC ACAAGCCAG CATCTTACC  
TACATTGCCA TCTTCTCAC GCACGGCAAC TCGGCCATGA ACCCATTGT CTATGCCTC CGCATCCAGA AGTTCGCGT  
CACCTTCTT AAGATTTGGA ATGACCATT CCGTGCCAG CTGCACCTC CCATTGACGA GGATCTCCA GAAGAGAGGC  
CTGATGACTA G ATGAGTGTCA GAAGTGTGAA GGGTGCCTGT TCTGAATCCC AGAGCCTCT CTCCCTCTGT GAGGCTGGCA  
GGTGAGGAG GGTTAACCT CACTGGAAG AATCCCTGGA CTAGCGGT GCTGAAGGC TCGAGGTGT GGGGCACTTG  
GACAGAACAG TCAGGCAGCC GGGAGCTCTG CAGCTTTGG TGACCTTGG CCGGGCTGG AGCCTGCGG CGGGAGCCGG  
AGGACTATGA GCTGCCGCG GTTGTCCAGA GCCAGCCCA GCCCTACGG CGCGGCCCG AGCTCTGTT CCTGGAACCT  
TGGGCACTG CTCTGGGACC CTGCGCGCC AGCAGGCAGG ATGGTGTG CTCTGTGCC CTGGTGGC GTCTGCTGAT  
GTGCCAGCC TGTGCCCGC ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC  
CTGGTCTCTG TGCCCGGGA CGTGTGGTG ATCTGGGCG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CTTCTGCTT  
CATCCTGCTG CTGGCGGTGG CTGATGTGGC CGTGGGTGCC CTGGTCACTC CCCTGCCAT CCTCATCAAC ATTGGGCCAC  
AGACCTACTT CCACACCTGC CTCATGTTG CTTGCTGGT CCTCATCTC ACCCAGAGCT CACTCTGGC CTTGCTGGCA  
ATTGCTGTG ACCGCTACCT CCGGTCAAG ATCCCTCTC GGTACAAGAT GGTGGTGACC CCGGAGGG CGGCGGTGG

CATAGCCGGC TGCTGGATCC TCTCCTTCGT GGTGGGACTG ACCCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC  
GGGCTGGGC AGCCAAACGGC AGCATGGGGG AGCCCGTGAT CAAGTGGGAG TCGAGAAGG TCATCAGCAT GGAGTACATG  
GTCTACTTCA ACTTCTTTGT GTGGGTGCTG CCCCCGCTC TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT  
CCGCAAGCAG CTCACAAAGA AGGTGTCCGC CTCCTCCGGC GACCCGAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA  
AGTCGTGGC CCTCATCTC TTCTCTTTG CCTCAGCTG GCTGCTTTG CACATCCTCA ACTGCATCAG CCTCTTCTGC  
CCGTCTGCC ACAAGCCCAG CATCCTTACC TACATTGCCA TCTCTCTAC GCACGGCAAC TCGGCCATGA ACCCATTTGT  
CTATGCCCTC CGCATCCAGA AGTTCGCGT CACCTTCCTT AAGATTGGA ATGACCATT CCGCTGCCAG CTGCACCTC  
CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA GACCCCGCT TCGCTCCCA CCAGCCACA TCCAGTGGG  
TCTCAGTCCA GTCCTACAT GCCCGCTGTC CCAGGGGTCT CCTGAGCCT GCCCAGCTG GGCTGTTGGC TGGGGGCATG  
GGGGAGGCTC TGAAGAGATA CCCACAGAGT GTGGTCCCTC CACTAGGAGT TAACTACCT ACACCTCTGG GCCCTGCAGG  
AGGCCTGGGA GGGCAAGGT CTTACGGAGG GACCAGGTGT CTAGAGGCAA CAGTGTCTG AGCCCCACCT TGCCTGACCA  
TCCCATGAGC AGTCCAGCGC TTCAGGGCTG GGCAGGTCT GGGGAGGCTG AGACTGCAGA GGAGCCACCT GGGCTGGAG  
AAGGTGCTTG GGCTTCTGCG GTGAGGCAGG GGAGTCTGCT TGTCTTAGAT GTTGGTGGTG CAGCCCCAGG ACCAAGCTTA  
AGGAGAGGAG AGCATCTGCT CTGAGACGGA TGAAGGAGA GAGGTGAGG ATGCACTGGC CTGTTCTGTA GGAGAGACTG  
GCCAGAGGCA GCTAAGGGG AGGAATCAAG GAGCCTCCGT TCCACCTCT GAGGACTCTG GACCCAGGC CATACCAGGT  
GCTAGGGTG CTGCTCTCT TGCCTGGGC CAGCCAGGA TTGTACGTGG GAGAGGCAGA AAGGGTAGGT TCAGTAATCA  
TTTCTGATGA TTTGCTGGAG TGCTGGCTC AGCCCTGGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCT CAACAGCCA  
CGAGGTGTA GCTCTGAGCC CTCCTTTTG CCTGAGCTT TCCGGGAGG AGCCTGGAGT GTAATTACCT GTCATCTGGG  
CCACCAGCTC CACTGGCCCC CGTTGCCGGG CTGGAGTGT CTTAGGTGAC CCCATCTCTG CTGCTTCTGG GCCTGATGGA  
GAGGAGACA CTAGACATGC CAACTCGGA GCATTCTGCC TGCTGGGAA CGGGGTGGAC GAGGGAGTGT CTGTAAGGAC  
TCAGTGTGA CTGAGGCGC CCTGGGGTG GTTTAGCAG GCTGCAGCAG GCAGAGGAG AGTACCCCC TGAGAGCATG  
TGGGGGAAG CCTTGCTGTC ATGTGAATCC CTCAATACCC CTAGTATCTG GCTGGGTTTT CAGGGGCTT GGAAGCTCTG  
TTGCAAGGTG CCGGGGGTCT AGGACTTTAG GGATCTGGA TGTGGGGAAG GACCAACCCA TGCCCTGCCA AGCCTGGAG  
CCCTGTGTTG GGGGGCAAGG TGGGGGAGCC TGGCCCTGG GTGTGGGAG GCGAGGCGGG GGAGCTTGA GCCCTGTGT  
GGGAGGGCGA GCGGGGGAT CTGGAGCCC CTGTGTCGGG GGGCGAGGGA GGGGAGGTGG CCGTGGTTG ACCTTCTGAA  
CATGAGTGT AACTCCAGGA CTGCTTCCA AGCCCTCCC TCTGTTGAA ATTGGGTGT CCCTGGCTCC CAAGGGAGGC  
CCATGTGACT AATAAAAAAC TGTGAACCT CGCATTTGTG TTTTAATAAA AGAATCTGGA AGATAAATAG TCTGAAGAG  
AGACAAAGGA AGGAAAATTT AATCCTTAG ATTCAAGCAG AAGAATCCA TGTGGAAGGT TTGGGTTGT GTTGTGTTG  
TTTGTGTTG TTTTGTGTTT TGTGTTT TGTGTTT TGAGATGGAG TCTCGTGTG TTACCGGAG CGACAGAGCC  
GCACGGCCGA TCTGAGTCCC AGCCAGCTAC CATCCCTCTG GAGCTTACC GCGGCTTG GCTTCCCAAG GAATCCCTGG  
AGCTAGCGGC TGCTGAAGGC GTCGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCAGC CGGGAGCTCT GCCAGCTTG  
GTGACCTTG GTGCTTGCT CGTGCCCTT GGTGCCGTG TGCTGATGT CCCAGCCTGT GCGGCCATG CCGCCCTCCA  
TCTCAGCTT CCAGGCCGCC TACATCGGA TCGAGGTGCT CATCGCCCTG GTCTCTGTG CCGGGAACGT GCTGGTGATC  
TGGGCGGTGA AGGTGAACCA GCGCTGCGG GATGCCACT TCTGCTCAT CGTGCTGCTG CCGGTGGCTG ATGTGGCCGT  
GGGTGCCCTG GTGATCCCT TCGCCATCCA CATCAACATT GGGCCACAGA CTAATTCCA CACTGCTCT ATGGTTGCT  
GTCCGGTCT CATCCTACC CAGAGTCCA TCTGGCCCT GTGGCAATT GCTGTGGACC GCTACCTCG GTCAAGATC  
CCTCTCCGT ACAAGATGGT GGTGACCCCC CGGAGGGCGG CGGTGGCCAT AGCCGGCTGC TGGATCCTCT CTTCTGTTG  
GGGACTGACC CCTATGTTG GCTGGAACAA TCTGAGTGC GTGGAGCGG CCTGGGCAGC CAACGGCAGC ATGGGGGAGC  
CCGTGATCAA GTGCGAGTTC GAGAAGGTCA TCAGCATGGA GTACATGGT TACTTCAACT TCTTGTGTG GGTGCTGCC  
CCGTTCTCC TCATGGTCT CATCTACCTG GAGGTCTTCT ACCTAATCCG CAAGCAGCTC AACAAGAAGG TGTCGGCCTC  
CTCCGGCAG CCGCAGAAGT ACTATGGAA GGAGCTGAAG ATCGCAAGT CGCTGGCCCT CATCCTCTC CTCTTGCCC  
TCAGCTGGCT GCCTTTGCAC ATCCTCAACT GCATACCTT CTTCTGCCC TCTGCCACA AGCCAGCAT CTTACCTAC  
ATTGCCATCT TCCTACGCA CGGCAACTCG GGCATGAACC CCATTGTCTA TGCTTCCG ATCCAGAAGT TCCGCTCAC  
CTTCTTAAG ATTTGAATG ACCATTCCG CTGCCAGCT GCACCTCCA TTGACGAGGA TCTCCAGAA GAGAGGCTG  
ATGACTAGAC CCCGCTTCC GCTCCACCG CCCACATCCA GTGGGTCTC AGTCCAGTCC TCATGCCC GCTGCTCCAG  
GGTCTCCCT GAGCTGCCC CAGCTGGCT GTTGGCTGG GGCATGGGG AGGCTCTGAA GAGATACCA CAGAGTGTG  
TCCCTCACT AGGAGTTAAT TACCCTACAT CTCTGGGCC TGCAGAGGC CTGGGAGGC AAGGGTCTA CGGAGGGACC  
AGGTGTCTAG AGGCAACAGT GTTCTGAGCC CCACTGCTG TACCATCC ATGAGCATC CAGAGCTTCA GGGCTGGCA  
GGTCTGGG AGGCTGAGAC TGCAGAGGAG CCACCTGGG TGGGAGAAGG TGCTGGGCT TCTGCGGTGA GCGAGGGAG  
TCTGCTGTC TTAGATGTTG GTGGTGCAGC CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA  
AGGAGAGAGG TTGAGGATGC ACTGGCCTGT TCTGAGGAG AGACTGGCA GA -3'(FRAG.NO: )(SEQ.NO:2423)  
5'-CGCATTTGTG TTTTAATAAA AGAATCTGGA AGATAAATAG TCTGAAGAG AGACAAAGGA AGGAAAATTT  
AAATCCTTAG ATTCAAGCAG AAGAATCCA TGTGGAAGGT TTGGTTGTT GTTGTGTTG TTTGGTGTG TTTTGTGTT  
TTTGTGTTT TGTGTTT TGTGTTT TGAGATGGAG TCTCGTGTG TTACGGGAG CGACAGAGCC GCACGGCCGA GTCGAGTCCC  
AGCCAGCTAC CATCCCTCTG GAGCTTACC GCGGCTTG GCTTCCCAAG GAATCCCTGG AGTAGCGGC TGCTGAAGGC  
GTCGAGGTGT GGGGGCACTT GGACAGAACA GTCAGGCAGC CGGGAGCTCT GCCAGCTTG GTGACCTTG GTGCTTGCT  
CGTGCCCTT GGTGCCCGT TGCTGATGT CCCAGCCTGT GCGGCCATG CCGCCCTCCA TCTCAGCTT CCAGGCCGCC  
TACATCGGA TCGAGGTGCT CATCGCCCTG GTCTGTGTC CCGGAACGT GCTGGTGATC TGGCGGTGA AGGTGAACCA  
GGCGTGGCG GATGCCACT TCTGCTCAT CGTGTGCTG GCGGTGGCTG ATGTGGCCGT GGGTGCCTG GTCATCCCC  
TCGCCATCT CATCAACATT GGGCCACAGA CTAATTCCA CACTGCTCT ATGTTGCT GTCCGCTCT CATCCTACC  
CAGAGCTCCA TCTGGCCCT GCTGGCAATT GCTGTGGACC GCTACCTCG GTCAAGATC CCTCTCCGT ACAAGATGT  
GGTGACCCC CGGAGGGCGG CGGTGGCCAT AGCCGGCTGC TGGATCCTCT CTTCTGTTG GGGACTGACC CCTATGTTG  
GCTGGAACAA TCTGAGTGC GTGGAGCGG CCTGGGCAGC CAACGGCAGC ATGGGGGAGC CCGTATCAA GTGCGAGTTC  
GAGAAGGTCA TCAGCATGGA GTACATGGT TACTTCAACT TCTTGTGTG GGTGCTGCC CCGCTTCTC TCATGGTCT  
CATCTACCTG GAGGTCTTCT ACCTAATCCG CAAGCAGCTC AACAAGAAGG TGTCGGCTC CTCCGGCAG CCGCAGAAGT  
ACTATGGAA GGAGCTGAAG ATCGCAAGT CGCTGGCCCT CATCCTCTC CTCTTGCCC TCAGCTGGT GCCTTTGCAC  
ATCCTCAACT GCATACCTT CTTCTGCCG TCTGCCACA AGCCAGCAT CTTACCTAC ATTGCCATCT TCCTACGCA  
CGGCAACTCG GCCATGAACC CCATTGTCTA TGCTTCCG ATCCAGAAGT TCCGCTCAC CTTCTTAAG ATTTGAATG  
ACCATTTCCG CTGCCAGCT GCACCTCCA TTGACGAGGA TCTCCAGAA GAGAGGCTG ATGACTAGAC CCCGCTTCC



GCTCCACCG CCCACATCCA GTGGGGTCTC AGTCCAGTCC TCACATGCCC GCTGTCCCAG GGGTCTCCCT GAGCCTGCC  
CAGCTGGGCT GTTGGCTGGG GGCATGGGGG AGGCTCTGAA GAGATACCCA CAGAGTGTGG TCCCTCCACT AGGAGTTAAC  
TACCCTACAC CTCTGGGCCC TGCAGGAGGC CTGGGAGGGC AAGGGTCTA CGGAGGGACC AGGTGTCTAG AGGCAACAGT  
GTTCTGAGCC CCCACCTGCC TGACCATCCC ATGAGCAGTC CAGAGCTTCA GGGCTGGGCA GGTCTGGGG AGGCTGAGAC  
TGCAGAGGAG CCACCTGGGC TGGGAGAAGG TGCTTGGGCT TCTGCGTGA GGCAGGGGAG TCTGCTTGTC TTAGATGTTG  
GTGGTGCAGC CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA AGGAGAGAGG TTGAGGATGC  
ACTGGCCTGT TCTGTAGGAG AGACTGGCCA GA -3' (FRAG. NO: ) (SEQ. ID NO: 2434)

5'- ATGAGTGTCA GAAGTGTGAA GGGTGCTGT TCTGAATCCC AGAGCCTCCT CTCCCTCTGT GAGGCTGGCA  
GGTGAGGAAG GGTTAACCT CACTGGAAGG AATCCTGGA GCTAGCGGCT GCTGAAGGCG TCGAGGTGTG GGGCACTTG  
GACAGAACAG TCAGGCAGCC GGGAGCTCTG CCAGCTTTGG TGACCTTGGG CCGGGCTGGG AGCGTCTGCG GGGAGCCGG  
AGGACTATGA GCTGCCGCGC GTTGTCCAGA CCCCAGCCCA GCCCTACGCG CGCGGCCGG CAATCTGATT CTGGAACCT  
TGGGCACTGC CTCTGGGACC CCTGCCGGCC AGCAGGCAAG ATGGTGTCTT CCTCGTGCCC CTGTGTGAT GTCTGTGAT  
GTGCCCAGCC TGTGCCGCGC ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC  
CTGGTCTCTG TCCCCGGGAA CGTGTCTGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CCGGATGCCA CCTTCTGCTT  
CATCGTGTG CTGGCGGTGG CTGATGTGGC CGTGGGTGCC CTGGTCATCC CCTCGCCAT CCTCATCAAC ATTGGGCCAC  
AGACCTACTT CCACACCTGC CTCATGGTTG CCTGTCCGGT CCTCATCTC ACCCAGAGCT CCATCCTGGC CTGTCTGGCA  
ATTGCTGTGG ACCGCTACCT CCGGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGGTGACC CCCCAGAGG CGCGGTGGC  
CATAGCCGGC TGCTGGATCC TCTCTTCGT GGTGGGACTG ACCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC  
GGGCTGGGC AGCCAACGGC AGCATGGGGG AGCCCGTGAT CAAGTGCAG TTCGAGAAGG TCATCAGCAT GGAGTACATG  
GTCTACTTCA ACTTCTTTGT GTGGGTGCTG CCCCCGCTT TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT  
CCGCAAGCAG CTCAACAAGA AGGTGTCCGC CTCTCCGGC GACCCGAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA  
AGTCGCTGGC CCTCATCTC TTTCTTTTGT CCTCAGCTG GCTGCCTTG CACATCTCA ACTGCATCAC CCTTCTGTC  
CCGTCTCTCC ACAAGCCAG CATCTTACC TACATGCCA TCTTCTCAC GCACGGCAAC TCGGCCATGA ACCCATTTGT  
CTATGCCCTT CACATCCAGA AGTTCGCGT CACCTTCTT AAGATTGGA ATGACCATTT CCGTGGCAG CTGTCACCTC  
CCATTGACGA GGATCTCCA GAAGAGAGGC CTGATGACTA GACCCGCTT TCCGCTCCA CCAGCCACA TCCAGTGGG  
TCTCAGTCCA GTCTCACAT GCGCGTGT CCAGGGGTCT CCTGAGCCT GCGCCAGCTG GGCTGTTGGC TGGGGGCATG  
GGGGAGGCTC TGAAGAGATA CCCACAGAGT GTGGTCCCTC CACTAGGAGT TAACTACCCT ACACCTCTGG GGCCTGCAGG  
AGGCTGGGA GGGCAAGGGT CCTACGGAGG GACCAGGTGT CTAGAGGCAA CAGTGTCTG AGCCCCACC TGCCTGACCA  
TCCCATGAGC AGTCCAGGC TTAGGGCTG GGCAGGTCT GGGGAGGCTG AGACTGCAGA GGAGCCACCT GGGCTGGGAG  
AAGGTGCTTG GCTTCTGCG GTGAGGCAGG GGAGTCTGT TGTCTTATG GTTGGTGGT CAGCCCAAG ACCAAGCTTA  
AGGAGAGGAG AGCATCTGCT CTGAGACGGA TGAAGGAGA GAGGTAGAG ATGCACTGGC CTGTTCTGTA GGAGAGACTG  
GCCAGAGGCA GCTAAGGGG AGGAATCAAG GAGCCTCGT TCCACCTCT GAGGACTCTG GACCCAGGC CATACAGGT  
GCTAGGGTGC CTGCTCTCT TGCCTGGGC CAGCCAGGA TTGTACGTG GAGAGGCAGA AAGGGTAGGT TCAGTAATCA  
TTTCTGATGA TTTGCTGGAG TGCTGGCTC ACGCCCTGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCCT CAAACAGCCA  
CGAGGTGTA GCTCTGAGCC CTCCTCTTG CCTGAGCTT TCCGGGAGG AGCCTGGAGT GTAATTACCT GTCATCTGGG  
CCACAGCTC CACTGGCCCG GTTGGCGG CTGGAGCTT CCTAGGTGAC CCCATCTCTG CTGCTTCTGG GCCTGATGGA  
GAGGAGAACA CTAGACATGC CAACTCGGA GCATTCTGCC TGCCTGGGA CCGGGTGGAG GAGGAGTGT CTGTAAGGAC  
TCAGTGTGA CTGAGGCGC CCTGGGGT GGTTAGCAG GCTGCAGCAG GCAGAGGAG AGTACCCCC TGAGAGCATG  
TGGGGGAAG CTTGCTGT ATGTGAATCC CTCAATACC CTAGTATCTG GCTGGGTTT CAGGGGCTT GGAAGCTCTG  
TTGAGGTGT CCGGGGTCT AGGACTTTAG GGATCTGGGA TCTGGGGAAG GACCAACCCA TGCCCTGCCA AGCCTGGAGC  
CCCTGTGTTG GGGGGCAAG TGGGGGAGCC TGGAGCCCT GTGTGGGAG GCGAGGCGGG GGAGCCTGGA GCCCTGTGT  
GGGAGGGCA GCGGGGGAT CCTGGAGCC CTGTGTGGG GGGCGAGGA GGGGAGGTGG CCGTGGTTG ACCTTCTGAA  
CATGAGTGT AACTCCAGGA CTTGCTTCCA AGCCCTTCCC TCTGTGGAA ATTGGGTGT CCGTGGCTCC CAAGGAGGC  
CCATGTGACT AATAAAAAAC TGTGAACCCT -3' (FRAG. NO: ) (SEQ. ID NO: 2433)

5'- ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TCCCCGGAA  
CGTGTCTGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CCGGATGCCA CTTCTGCTT CATCGTCTG CTGGCGGTGG  
CTGATGTGGC CGTGGGTGCC CTGGTCATCC CCTCGCCAT CCTCATCAAC ATTGGGCCAC AGACCTACTT CCACACCTGC  
CTCAGGTTG CTTGTCCGT CCTCATCTC ACCCAGAGCT CCATCTGGC CTGTCTGGCA ATTGCTGTGG ACCGCTACCT  
CCGGTCAAG ATCCCTCTCC GGTACAAGAT GGTGTGACC CCGGAGGG CGGCGGTGGC CATAGCCGGC TGCTGGATCC  
TCTCTTCGT GGTGGGACTG ACCCTATGT TTGGCTGGAA CAATCTGAGT GCGGTGGAGC GGGCCTGGGC AGCCAACGGC  
AGCATGGGG AGCCCGTGAT CAAGTGCAG TTCGAGAAG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTTGT  
GTGGGTGCTG CCCCCGCTT TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA  
AGGTGTCCGC CTCTCCGGC GACCCGAGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTCGCTGGC CCTCATCTC  
TTCTCTTTG CCTCAGCTG GCTGCCTTG CACATCTCA ACTGCATCAC CCTTCTGTC CCGTCTGCC ACAAGCCAG  
CATCCTTACC TACATTGCCA TCTTCTCAC GCACGGCAAC CCGGCAATGA ACCCATTTGT CTATGCCCTC GGCATCCAGA  
AGTTCGCGT CACCTTCTT AAGATTGGA ATGACCATTT CCGTGGCAG CCTGCACCTC CCATTGACGA GGATCTCCA  
GAAGAGAGGC CTGATGACTA G -3' (FRAG. NO: ) (SEQ. ID NO: 2432)

5'-CGCATTTGTG TTTAATAAA AGAATCTGGA AGATAAATAG TCTGAAGAG AGACAAAGGA AGGAAATTT  
AAATCCTTAG ATTCAAGCAG AAGAATTCCA TGTGGAAGGT TTGGGTGTT GTTGTGTTG TTTGGTGTG TTTTGTGTT  
TTTGTGTTT TGTGTTTTT TGAGATGGAG TCTCGTGTG TTACCGGGAG CGACAGAGCC GCACGGCCA GTGAGTCCC  
AGCCAGTAC CATCCCTCTG GAGCTTACC GCGGCGCTG GCTTCCCCAG GAATCCCTGG AGTACGCGG TGCTGAAGC  
GTGAGGTGT GGGGGCACTT GGACAGAACA GTACGGCAG CCGGAGCTCT GCCAGCTTT GTGACCTGG GTGCTTGCCT  
CGTGCCCTT GGTGCCCGT TGCTGATGT CCCAGCCTG GCGGCCATG CCGCCCTCCA TCTCAGCTTT CCAGGCCGCC  
TACATCGCA TCGAGGTGCT CATCGCCCTG GTCTGTGTC CCGGAACGT GCTGGTGATC TGGGCGTGA AGGTGAACCA  
GGCGTGGCG GATGCCACCT TCTGCTCAT CGTGTGCTG GCGGTGGCTG ATGTGGCGT GGGTGCCCTG GTCATCCCC  
TCGCCATCT CATCAACATT GGGCCACAGA CTAATTCCA CACCTGCCCT ATGGTTGCCT GTCCGCTCT CATCCTACC  
CAGAGCTCA TCTGGCCCT GCTGGCAATT GCTGTGGACC GCTACCTCCG GGTCAAGATC CCTCTCCGT ACAAGATGGT  
GGTAGCCCC CGGAGGCGG CGGTGGCAT AGCCGCTGC TGGATCTCT CCTCTGTTG GGGAGTACC CCTATGTTG  
GCTGGAACAA TCTAGTGC GTGGAGCGG CCGGGCAGC CAACGGCAGC ATGGGGGAG CCGTGATCAA GTGCGAGTTC



GAGAAGGTCA TCAGCATGGA GTACATGGTC TACTTCAACT TCTTTGTGTG GGTGCTGCCC CCGCTTCTCC TCATGGTCTC  
CATCTACCTG GAGGTCTTCT ACCTAATCCG CAAGCAGCTC AACAAAGAAGG TGTCGGCCTC CTCGGGCGAC CGGCAGAAAGT  
ACTATGGGAA GGAGCTGAAG ATCGCCAAGT CGCTGGCCCT CATCTCTTCT CTCTTTGCCG TCAGCTGGCT GCCTTTGCAC  
ATCTCAACT GCATCACCT CTCTGCCCCG TCTTGCCACA AGCCCAGCAT CCTTACCTAC ATTGCCATCT TCCTCACGCA  
CGGCAACTCG GCCATGAACC CCATTGTCTA TGCTTCCCG ATCCAGAAGT TCCGCGTCAC CTTCCTTAAG ATTTGGAATG  
ACCATTTCCG CTGCCAGCCT GCACCTCCCA TTGACGAGGA TCTCCAGAA GAGAGGCTG ATGACTAGAC CCCGCTTCC  
GCTCCACCG CCCACATCCA GTGGGGTCTC AGTCCAGTCC TCACATGCCC GCTGTCCAG GGGTCTCCCT GAGCCTGCCC  
CAGCTGGGCT GTTGGCTGGG GGCATGGGGG AGGCTCTGAA GAGATACCCA CAGAGTGTGG TCCCTCCACT AGGAGTTAAC  
TACCCTACAC CTCTGGGCCC TGCAGGAGGC CTGGGAGGGC AAGGGTCTTA CGGAGGGACC AGGTGTCTAG AGGCAACAGT  
GTTCTGAGCC CCCACCTGCC TGACCATCCC ATGACGAGT CAGAGCTTCA GGGCTGGGCA GGTCTGGGG AGGCTGAGAC  
TGCAGAGGAG CCACCTGGGC TGGGAGAAGG TGCTTGGCT TCTGCGGTGA GGCAGGGGAG TCTGTTGTC TTAGATGTTG  
GTGGTGACG CCCAGGACCA AGCTTAAGGA GAGGAGAGCA TCTGCTCTGA GACGGATGGA AGGAGAGAGG TTGAGGATGC  
ACTGGCTGT TCTGTAGGAG AGACTGGCCA GA -3' (FRAG. NO: ) (SEQ. ID NO: 2422)

5'-ATGAGTGTCA GAAGTGTGAA GGTGCTGT TCTGAATCCC AGAGCTCCT CTCCTCTGT GAGGCTGGCA  
GGTGAGGAAG GGTTAACCT CACTGGAAGG AATCCCTGGA GCTAGCGGT GCTGAAGGCG TCGAGGTGTG GGGGCACTTG  
GACAGAACAG TCAGGCAGCC GGGAGCTCTG CCAGCTTTGG TGACCTTGGG CCGGCTGGG AGCGCTGCGG CGGGAGCCGG  
AGGACTATGA GCTGCCGCGC GTTGTCCAGA GCCCAGCCCA CCCCTACGCG CGCGGCCCG AGCTCTGTTT CCTGGAACCT  
TGGGCACTGC CTCTGGGACC CTTGCCGCGC AGCAGGCAGG ATGGTGTCTG CTTGCTGCCG CTCTGCTGAT  
GTGCCAGCC TGTGCCGCC ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC  
CTGGTCTCTG TGCCCGGGAA CGTGTCTGGT ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CTTTCTGCTT  
CATCGTGTG CTGGCGGTGG CTGATGTGGC CGTGGGTGCC CTGGTCACT CCCTCGCCAT CTTCTCAAC ATTTGGCCAC  
AGACCTACT CCACACCTGC CTCATGTTG CTTGTCCGCT CCTCATCTC ACCCAGAGCT CCATCTGGC CTGCTGGCA  
ATTGCTGTG ACCGTACCT CCGGTCAAG ATCCCTCTC GGTACAAGT GGTGGTGACC CCGGAGGG CGGCGGTGGC  
CATAGCCGGC TGCTGGATCC TCTCTTCTG GGTGGGACTG ACCCTATGT TTGCTGGAA CAATCTGAG CCGGTGGAGC  
GGGCTGGGC AGCCAACGGC AGCATGGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG  
GTCTACTTCA ACTTCTTGT GTGGGTGCTG CCCCCGCTT TCCTCATGTT CCTCATCTAC CTGGAGGTCT TCTACCTAAT  
CCGCAAGCAG CTCAACAAGA AGGTGTCCGG CTCCTCCGGC GACCCGCGA AGTACTATGG GAAGGAGCTG AAGATCGCCA  
AGTCGCTGGC CCTCATCTC TTCTCTTTG CCTCAGCTG GCTGCCCTT CACATCTCA ACTGCATCAC CCTCTTCTG  
CCGTCTGACC ACAAGCCAG CATCCTTACC TACATTGCCA TCTTCTCAC GCACGGCAAC TCGGCCATGA ACCCATTTG  
CTATGCCCT CGCATCCAGA AGTTCGCGT CACCTTCTT AAGATTGGA ATGACCATTT CCGCTGCCAG CCGGTGGAGC  
CCATTGACGA GGATCTCCCA GAAGAGAGGC CTGATGACTA GACCCCGCT TCCGCTCCCA CCAGCCACA TCCAGTGGGG  
TCTCAGTCCA GTCCTACAT GCCGCTGTC CCAGGGGTCT CCTGAGCCT GCCCAGCTG GGCTGTGGC TGGGGGCATG  
GGGGAGGCTC TGAAGAGATA CCCACAGAGT GTGGTCCCT CACTAGGAGT TAACTACCCT ACACCTCTGG GCCTGCAGG  
AGGCTGGGA GGGCAAGGT CTAAGGAGG GACCAGGTGT CTAGAGGCAA CAGTGTCTG AGCCCCACC TGCTGACCA  
TCCCATGAG AGTCCAGCGC TTCAGGGCTG GGCAGTCTT GGGGAGGCTG AGACTGCAGA GGAGCCACT GGGCTGGGAG  
AAGGTGCTT GGCTTCTGCG GTGAGGCAGG GAGTGTCTG TGTCTAGAT GTTGTGGT GACCCAGG ACCAAGCTTA  
AGGAGAGGAG AGCATCTGCT CTGAGACGGA TGAAGGAGA GAGGTTGAGG ATGCACTGGC CTGTTCTGTA GGAGAGACTG  
GCCAGAGGCA GCTAAGGGG AGGAATCAAG GAGCTCCGT TCCACCTCT GAGGACTCTG GACCCAGGC CATACAGGT  
GCTAGGGTGC CTGCTCTCT TGCCCTGGG CAGCCAGGA TTGTACGTGG GAGAGGCAGA AAGGGTAGGT TCAGTAATCA  
TTTCTGATGA TTTGCTGGAG TGCTGGCTCC ACGCCTGGG GAGTGAGCTT GGTGCGGTAG GTGCTGGCT CAAACAGCCA  
CGAGGTGTA GCTCTGAGCC CTCCTTCTG CCTGAGCTT TCCGGGAGG AGCCTGGAG GTAATTACCT GTCATCTGGG  
CCACCAGCTC CACTGGCCCC CGTTGCCGGG CTTGAGCTGT CTAGGTGAC CCCATCTCTG CTGCTTCTGG CCTGATGGA  
GAGGAGAACA CTAGACATGC CAATCGGGA GCATTCTGCC TGCTGGGAA CGGGGTGGAC GAGGGAGTGT CTGTAAGGAC  
TCAGTGTGA CTGTAGGCGC CCTGGGGTG GGTTAGCAG GCTGCAGCAG GCAGAGGAG AGTACCCCC TGAGAGCATG  
TGGGGGAAGG CTTGCTGTC ATGTGAATCC CTCAATACCC CTAGTATCTG GCTGGGTTT CAGGGGCTT GGAAGCTCTG  
TTGAGGTGT CCGGGGGTCT AGGACTTTAG GGATCTGGGA TCTGGGGAAG GACCAACCCA TGCCCTGCCA AGCCTGGAGC  
CCCTGTGTTG GGGGGCAAGG TGGGGGAGCC TGGAGCCCT GTGTGGGAG GCGAGGCGG GGAGCTGGA GCCCTGTGT  
GGGAGGGCGA GCGGGGGAT CTTGAGGCC CTGTGTGCG GGTGAGGGA GGGGAGGTGG CCGTGGTTG ACCTTCTGAA  
CATGAGTGT AACTCCAGGA CTGCTTCCA AGCCTTCCC TCTGTGGAA ATTGGGTGT CCCTGGCTCC CAAGGGAGGC  
CCATGTGACT AATAAAAAAC TGTGAACCCT -3' (FRAG. NO: ) (SEQ. ID NO: 2421)

5'-ATGCCGCCCT CCATCTCAGC TTTCCAGGCC GCCTACATCG GCATCGAGGT GCTCATCGCC CTGGTCTCTG TGCCCGGGAA  
CGTGTGGTG ATCTGGGCGG TGAAGGTGAA CCAGGCGCTG CGGGATGCCA CTTCTGCTT CATGCTCTG CTGGCGGTGG  
CTGATGTGGC CTGGGTGCC CTGGTCACT CCCTCGCAT CCTCATCAAC ATTGGGCCAC AGACCTACT CCACACCTGC  
CTCATGGTTG CTGTCCGGT CCTATCCTC ACCCAGAGCT CCATCTGGC CTGCTGGCA ATTGCTGTGG ACCGTACCT  
CCGGTCAAG ATCCCTCTCC GGTACAAGT GGTGGTGACC CCGGAGGG CGGCGGTGGC CATAGCCGGC TCTGGATCC  
TCTCTCTGT GGTGGGACTG CCCCTATGT TTGGCTGGA CAATCTGAGT GCGGTGGAGC GGGCTGGG AGCCAACGGC  
AGCATGGGG AGCCCGTGAT CAAGTGCGAG TTCGAGAAGG TCATCAGCAT GGAGTACATG GTCTACTTCA ACTTCTTGT  
GTGGGTGCTG CCCCCGCTT TCCTCATGGT CCTCATCTAC CTGGAGGTCT TCTACCTAAT CCGCAAGCAG CTCAACAAGA  
AGGTGTGGC CTCTCCGGC GACCCGCGA AGTACTATGG GAAGGAGCTG AAGATCGCCA AGTGCCTGGC CCTCATCTC  
TTCTCTTTG CCTCAGCTG GCTGCCCTT CACATCTCA ACTGCATCAC CCTCTTCTG CCGTCTGCC ACAAGCCAG  
CATCCTTACC TACATTGCCA TCTTCTCAC GCACGGCAAC TCGGCCATGA ACCCATTTG CTATGCTTCC CGCATCAGA  
AGTTCGCGT CACCTTCTT AAGATTGGA ATGACCATTT CCGTGGCAG CTGCACCTC CCATTGACGA GGATCTCCCA  
GAAGAGAGGC CTGATGACTA G (FRAG. NO: ) (SEQ. ID NO: 2420)

5'-GAT GGA GGG CGG CAT GGC GGG-3' (FRAG. NO: 1657) (SEQ ID NO: 1670)

5'-G CGG GTC CCC GG-3' (FRAG. NO: 1658) (SEQ ID NO: 1671)

5'-GGC GGG CBC BGG C-3' (FRAG. NO: 1659) (SEQ ID NO: 1672)

5'-GGC GGG CBC-3' (FRAG. NO: 1660) (SEQ ID NO: 1673)

5'-GC GGC CTG G-3' (FRAG. NO: 1661) (SEQ ID NO: 1674)

5'-GGB GGG CGG C-3' (FRAG. NO: 1662) (SEQ ID NO: 1675)

[illegible]

5'-GGC GGC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 68) (SEQ. ID NO: 78)  
5'-GGC GGC CTG GAA AGC TGA GAT GGA G -3' (FRAG 69) (SEQ. ID NO: 79)  
5'-GGC GGC CTG GAA AGC TGA GAT GGA -3' (FRAG 70) (SEQ. ID NO: 80)  
5'-GGC GGC CTG GAA AGC TGA GAT GG -3' (FRAG 71) (SEQ. ID NO: 81)  
5'-GGC GGC CTG GAA AGC TGA GAT G -3' (FRAG 72) (SEQ. ID NO: 82)  
5'-GGC GGC CTG GAA AGC TGA GAT -3' (FRAG 73) (SEQ. ID NO: 83)  
5'-GGC GGC CTG GAA AGC TGA GA-3' (FRAG 74) (SEQ. ID NO: 84)  
5'-GGC GGC CTG GAA AGC TGA G-3' (FRAG 75) (SEQ. ID NO: 85)  
5'-GGC GGC CTG GAA AGC TGA-3' (FRAG 76) (SEQ. ID NO: 86)  
5'-GGC GGC CTG GAA AGC TG-3' (FRAG 77) (SEQ. ID NO: 87)  
5'-GGC GGC CTG GAA AGC T-3' (FRAG 78) (SEQ. ID NO: 88)  
5'-GGC GGC CTG GAA AGC-3' (FRAG 79) (SEQ. ID NO: 89)  
5'-GGC GGC CTG GAA AG-3' (FRAG 80) (SEQ. ID NO: 90)  
5'-GGC GGC CTG GAA A-3' (FRAG 81) (SEQ. ID NO: 91)  
5'-GGC GGC CTG GAA-3' (FRAG 82) (SEQ. ID NO: 92)  
5'-GGC GGC CTG GA-3' (FRAG 83) (SEQ. ID NO: 93)  
5'-GGC GGC CTG G-3' (FRAG 84) (SEQ. ID NO: 94)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 85) (SEQ. ID NO: 95)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 86) (SEQ. ID NO: 96)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 87) (SEQ. ID NO: 97)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 88) (SEQ. ID NO: 98)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 89) (SEQ. ID NO: 99)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 90) (SEQ. ID NO: 100)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 91) (SEQ. ID NO: 101)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 92) (SEQ. ID NO: 102)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 93) (SEQ. ID NO: 103)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 94) (SEQ. ID NO: 104)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 95) (SEQ. ID NO: 105)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 96) (SEQ. ID NO: 106)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 97) (SEQ. ID NO: 107)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 98) (SEQ. ID NO: 108)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 99) (SEQ. ID NO: 109)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 100) (SEQ. ID NO: 110)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 101) (SEQ. ID NO: 111)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 102) (SEQ. ID NO: 112)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 103) (SEQ. ID NO: 113)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 104) (SEQ. ID NO: 114)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 105) (SEQ. ID NO: 115)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 106) (SEQ. ID NO: 116)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 107) (SEQ. ID NO: 117)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 108) (SEQ. ID NO: 118)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 109) (SEQ. ID NO: 119)  
5'-GC GGC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 110) (SEQ. ID NO: 120)  
5'-GC GGC CTG GAA AGC TGA GAT GGA G -3' (FRAG 111) (SEQ. ID NO: 121)  
5'-GC GGC CTG GAA AGC TGA GAT GGA -3' (FRAG 112) (SEQ. ID NO: 122)  
5'-GC GGC CTG GAA AGC TGA GAT GG -3' (FRAG 113) (SEQ. ID NO: 123)  
5'-GC GGC CTG GAA AGC TGA GAT G -3' (FRAG 114) (SEQ. ID NO: 124)  
5'-GC GGC CTG GAA AGC TGA GAT -3' (FRAG 115) (SEQ. ID NO: 125)  
5'-GC GGC CTG GAA AGC TGA GA-3' (FRAG 116) (SEQ. ID NO: 126)  
5'-GC GGC CTG GAA AGC TGA G-3' (FRAG 117) (SEQ. ID NO: 127)  
5'-GC GGC CTG GAA AGC TGA-3' (FRAG 118) (SEQ. ID NO: 128)  
5'-GC GGC CTG GAA AGC TG-3' (FRAG 119) (SEQ. ID NO: 129)  
5'-GC GGC CTG GAA AGC T-3' (FRAG 120) (SEQ. ID NO: 130)  
5'-GC GGC CTG GAA AGC-3' (FRAG 121) (SEQ. ID NO: 131)  
5'-GC GGC CTG GAA AG-3' (FRAG 122) (SEQ. ID NO: 132)  
5'-GC GGC CTG GAA A-3' (FRAG 123) (SEQ. ID NO: 133)  
5'-GC GGC CTG GAA-3' (FRAG 124) (SEQ. ID NO: 134)  
5'-GC GGC CTG GA-3' (FRAG 125) (SEQ. ID NO: 135)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 126) (SEQ. ID NO: 136)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 127) (SEQ. ID NO: 137)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 128) (SEQ. ID NO: 138)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 129) (SEQ. ID NO: 139)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 130) (SEQ. ID NO: 140)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 131) (SEQ. ID NO: 141)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 132) (SEQ. ID NO: 142)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 133) (SEQ. ID NO: 143)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 134) (SEQ. ID NO: 144)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 135) (SEQ. ID NO: 145)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 136) (SEQ. ID NO: 146)

5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 137) (SEQ. ID NO: 147)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 138) (SEQ. ID NO: 148)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 139) (SEQ. ID NO: 149)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 140) (SEQ. ID NO: 150)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 141) (SEQ. ID NO: 151)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 142) (SEQ. ID NO: 152)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 143) (SEQ. ID NO: 153)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 144) (SEQ. ID NO: 154)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 145) (SEQ. ID NO: 155)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 146) (SEQ. ID NO: 156)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 147) (SEQ. ID NO: 157)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 148) (SEQ. ID NO: 158)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 148) (SEQ. ID NO: 159)  
5'-C GGC CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 150) (SEQ. ID NO: 160)  
5'-C GGC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 151) (SEQ. ID NO: 161)  
5'-C GGC CTG GAA AGC TGA GAT GGA G -3' (FRAG 152) (SEQ. ID NO: 162)  
5'-C GGC CTG GAA AGC TGA GAT GGA -3' (FRAG 153) (SEQ. ID NO: 163)  
5'-C GGC CTG GAA AGC TGA GAT GG -3' (FRAG 154) (SEQ. ID NO: 164)  
5'-C GGC CTG GAA AGC TGA GAT G -3' (FRAG 155) (SEQ. ID NO: 165)  
5'-C GGC CTG GAA AGC TGA GAT -3' (FRAG 156) (SEQ. ID NO: 166)  
5'-C GGC CTG GAA AGC TGA GA-3' (FRAG 157) (SEQ. ID NO: 167)  
5'-C GGC CTG GAA AGC TGA G-3' (FRAG 158) (SEQ. ID NO: 168)  
5'-C GGC CTG GAA AGC TGA-3' (FRAG 159) (SEQ. ID NO: 169)  
5'-C GGC CTG GAA AGC TG-3' (FRAG 160) (SEQ. ID NO: 170)  
5'-C GGC CTG GAA AGC T-3' (FRAG 161) (SEQ. ID NO: 171)  
5'-C GGC CTG GAA AGC-3' (FRAG 162) (SEQ. ID NO: 172)  
5'-C GGC CTG GAA AG-3' (FRAG 163) (SEQ. ID NO: 173)  
5'-C GGC CTG GAA A-3' (FRAG 164) (SEQ. ID NO: 174)  
5'-C GGC CTG GAA-3' (FRAG 165) (SEQ. ID NO: 175)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 166) (SEQ. ID NO: 176)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 167) (SEQ. ID NO: 177)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 168) (SEQ. ID NO: 178)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG-3' (FRAG 169) (SEQ. ID NO: 179)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 170) (SEQ. ID NO: 180)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 171) (SEQ. ID NO: 181)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 172) (SEQ. ID NO: 182)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 173) (SEQ. ID NO: 183)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT TGC GGG CAC A-3' (FRAG 174) (SEQ. ID NO: 184)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT TGC GGG CAC-3' (FRAG 175) (SEQ. ID NO: 185)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT TGC GGG CA-3' (FRAG 176) (SEQ. ID NO: 186)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT TGC GGG C-3' (FRAG 177) (SEQ. ID NO: 187)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT TGC GGG -3' (FRAG 178) (SEQ. ID NO: 188)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT TGC GG-3' (FRAG 179) (SEQ. ID NO: 189)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT TGC G-3' (FRAG 180) (SEQ. ID NO: 190)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT TGC -3' (FRAG 181) (SEQ. ID NO: 191)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT TG -3' (FRAG 182) (SEQ. ID NO: 192)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 183) (SEQ. ID NO: 193)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 184) (SEQ. ID NO: 194)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 185) (SEQ. ID NO: 195)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 186) (SEQ. ID NO: 196)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 187) (SEQ. ID NO: 197)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 188) (SEQ. ID NO: 198)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 189) (SEQ. ID NO: 199)  
5'-GGC CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 190) (SEQ. ID NO: 200)  
5'-GGC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 191) (SEQ. ID NO: 201)  
5'-GGC CTG GAA AGC TGA GAT GGA G -3' (FRAG 192) (SEQ. ID NO: 202)  
5'-GGC CTG GAA AGC TGA GAT GGA -3' (FRAG 193) (SEQ. ID NO: 203)  
5'-GGC CTG GAA AGC TGA GAT GG -3' (FRAG 194) (SEQ. ID NO: 204)  
5'-GGC CTG GAA AGC TGA GAT G -3' (FRAG 195) (SEQ. ID NO: 205)  
5'-GGC CTG GAA AGC TGA GAT -3' (FRAG 196) (SEQ. ID NO: 206)  
5'-GGC CTG GAA AGC TGA GA-3' (FRAG 197) (SEQ. ID NO: 207)  
5'-GGC CTG GAA AGC TGA G-3' (FRAG 198) (SEQ. ID NO: 208)  
5'-GGC CTG GAA AGC TGA-3' (FRAG 199) (SEQ. ID NO: 209)  
5'-GGC CTG GAA AGC TG-3' (FRAG 200) (SEQ. ID NO: 210)  
5'-GGC CTG GAA AGC T-3' (FRAG 201) (SEQ. ID NO: 211)  
5'-GGC CTG GAA AGC-3' (FRAG 202) (SEQ. ID NO: 212)  
5'-GGC CTG GAA AG-3' (FRAG 203) (SEQ. ID NO: 213)  
5'-GGC CTG GAA A-3' (FRAG 204) (SEQ. ID NO: 214)  
5'-GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 205) (SEQ. ID NO: 215)

5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 206) (SEQ. ID NO: 216)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 207) (SEQ. ID NO: 217)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 208) (SEQ. ID NO: 218)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 209) (SEQ. ID NO: 219)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 210) (SEQ. ID NO: 220)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 211) (SEQ. ID NO: 221)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 212) (SEQ. ID NO: 222)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 213) (SEQ. ID NO: 223)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 214) (SEQ. ID NO: 224)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 215) (SEQ. ID NO: 225)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 216) (SEQ. ID NO: 226)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 217) (SEQ. ID NO: 227)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 218) (SEQ. ID NO: 228)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 219) (SEQ. ID NO: 229)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 220) (SEQ. ID NO: 230)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 221) (SEQ. ID NO: 231)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 222) (SEQ. ID NO: 232)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 223) (SEQ. ID NO: 233)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 224) (SEQ. ID NO: 234)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 225) (SEQ. ID NO: 235)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 226) (SEQ. ID NO: 236)  
5'- GC CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 227) (SEQ. ID NO: 237)  
5'- GC CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 228) (SEQ. ID NO: 238)  
5'- GC CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 229) (SEQ. ID NO: 239)  
5'- GC CTG GAA AGC TGA GAT GGA GG -3' (FRAG 230) (SEQ. ID NO: 240)  
5'- GC CTG GAA AGC TGA GAT GGA G -3' (FRAG 231) (SEQ. ID NO: 241)  
5'- GC CTG GAA AGC TGA GAT GGA -3' (FRAG 232) (SEQ. ID NO: 242)  
5'- GC CTG GAA AGC TGA GAT GG -3' (FRAG 233) (SEQ. ID NO: 243)  
5'- GC CTG GAA AGC TGA GAT G -3' (FRAG 234) (SEQ. ID NO: 244)  
5'- GC CTG GAA AGC TGA GAT -3' (FRAG 235) (SEQ. ID NO: 245)  
5'- GC CTG GAA AGC TGA GA-3' (FRAG 236) (SEQ. ID NO: 246)  
5'- GC CTG GAA AGC TGA G-3' (FRAG 237) (SEQ. ID NO: 247)  
5'- GC CTG GAA AGC TGA-3' (FRAG 238) (SEQ. ID NO: 248)  
5'- GC CTG GAA AGC TG-3' (FRAG 239) (SEQ. ID NO: 249)  
5'- GC CTG GAA AGC T-3' (FRAG 240) (SEQ. ID NO: 250)  
5'- GC CTG GAA AGC-3' (FRAG 241) (SEQ. ID NO: 251)  
5'- GC CTG GAA AG-3' (FRAG 242) (SEQ. ID NO: 252)  
5'- C CTG GAA AGC TGA GAT GG A GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 243) (SEQ. ID NO: 253)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 244) (SEQ. ID NO: 254)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 245) (SEQ. ID NO: 255)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 246) (SEQ. ID NO: 256)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 247) (SEQ. ID NO: 257)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 248) (SEQ. ID NO: 258)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 249) (SEQ. ID NO: 259)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 250) (SEQ. ID NO: 260)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 251) (SEQ. ID NO: 261)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 252) (SEQ. ID NO: 262)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 253) (SEQ. ID NO: 263)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 254) (SEQ. ID NO: 264)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 255) (SEQ. ID NO: 265)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 256) (SEQ. ID NO: 266)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 257) (SEQ. ID NO: 267)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 258) (SEQ. ID NO: 268)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 259) (SEQ. ID NO: 269)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 260) (SEQ. ID NO: 270)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 261) (SEQ. ID NO: 271)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 262) (SEQ. ID NO: 272)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 263) (SEQ. ID NO: 273)  
5'- C CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 264) (SEQ. ID NO: 274)  
5'- C CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 265) (SEQ. ID NO: 275)  
5'- C CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 266) (SEQ. ID NO: 276)  
5'- C CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 267) (SEQ. ID NO: 277)  
5'- C CTG GAA AGC TGA GAT GGA GG -3' (FRAG 268) (SEQ. ID NO: 278)  
5'- C CTG GAA AGC TGA GAT GGA G -3' (FRAG 269) (SEQ. ID NO: 279)  
5'- C CTG GAA AGC TGA GAT GGA -3' (FRAG 270) (SEQ. ID NO: 280)  
5'- C CTG GAA AGC TGA GAT GG -3' (FRAG 271) (SEQ. ID NO: 281)  
5'- C CTG GAA AGC TGA GAT G -3' (FRAG 272) (SEQ. ID NO: 282)  
5'- C CTG GAA AGC TGA GAT -3' (FRAG 273) (SEQ. ID NO: 283)  
5'- C CTG GAA AGC TGA GA-3' (FRAG 274) (SEQ. ID NO: 284)

5'- C CTG GAA AGC TGA G-3' (FRAG 275) (SEQ. ID NO: 285)  
5'- C CTG GAA AGC TGA-3' (FRAG 276) (SEQ. ID NO: 286)  
5'- C CTG GAA AGC TG-3' (FRAG 277) (SEQ. ID NO: 287)  
5'- C CTG GAA AGC T-3' (FRAG 278) (SEQ. ID NO: 288)  
5'- C CTG GAA AGC-3' (FRAG 279) (SEQ. ID NO: 289)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 280) (SEQ. ID NO: 290)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 281) (SEQ. ID NO: 291)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 282) (SEQ. ID NO: 292)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 283) (SEQ. ID NO: 293)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 284) (SEQ. ID NO: 294)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 285) (SEQ. ID NO: 295)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 286) (SEQ. ID NO: 296)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 287) (SEQ. ID NO: 297)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 288) (SEQ. ID NO: 298)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 289) (SEQ. ID NO: 299)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 290) (SEQ. ID NO: 300)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 291) (SEQ. ID NO: 301)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 292) (SEQ. ID NO: 302)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 293) (SEQ. ID NO: 303)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 294) (SEQ. ID NO: 304)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 295) (SEQ. ID NO: 305)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 296) (SEQ. ID NO: 306)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 297) (SEQ. ID NO: 307)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 298) (SEQ. ID NO: 308)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 299) (SEQ. ID NO: 309)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 300) (SEQ. ID NO: 310)  
5'- CTG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 301) (SEQ. ID NO: 311)  
5'- CTG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 302) (SEQ. ID NO: 312)  
5'- CTG GAA AGC TGA GAT GGA GGG C -3' (FRAG 303) (SEQ. ID NO: 313)  
5'- CTG GAA AGC TGA GAT GGA GGG -3' (FRAG 304) (SEQ. ID NO: 314)  
5'- CTG GAA AGC TGA GAT GGA GG -3' (FRAG 305) (SEQ. ID NO: 315)  
5'- CTG GAA AGC TGA GAT GGA G -3' (FRAG 306) (SEQ. ID NO: 316)  
5'- CTG GAA AGC TGA GAT GGA -3' (FRAG 307) (SEQ. ID NO: 317)  
5'- CTG GAA AGC TGA GAT GG -3' (FRAG 308) (SEQ. ID NO: 318)  
5'- CTG GAA AGC TGA GAT G -3' (FRAG 309) (SEQ. ID NO: 319)  
5'- CTG GAA AGC TGA GAT -3' (FRAG 310) (SEQ. ID NO: 320)  
5'- CTG GAA AGC TGA GA-3' (FRAG 311) (SEQ. ID NO: 321)  
5'- CTG GAA AGC TGA G-3' (FRAG 312) (SEQ. ID NO: 322)  
5'- CTG GAA AGC TGA-3' (FRAG 313) (SEQ. ID NO: 323)  
5'- CTG GAA AGC TG-3' (FRAG 314) (SEQ. ID NO: 324)  
5'- CTG GAA AGC T-3' (FRAG 315) (SEQ. ID NO: 325)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 316) (SEQ. ID NO: 326)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 317) (SEQ. ID NO: 327)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 318) (SEQ. ID NO: 328)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 319) (SEQ. ID NO: 329)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 320) (SEQ. ID NO: 330)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 321) (SEQ. ID NO: 331)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 322) (SEQ. ID NO: 332)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 323) (SEQ. ID NO: 333)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 324) (SEQ. ID NO: 334)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 325) (SEQ. ID NO: 335)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 326) (SEQ. ID NO: 336)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 327) (SEQ. ID NO: 337)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 328) (SEQ. ID NO: 338)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 329) (SEQ. ID NO: 339)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 330) (SEQ. ID NO: 340)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 331) (SEQ. ID NO: 341)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 332) (SEQ. ID NO: 342)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 333) (SEQ. ID NO: 343)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 334) (SEQ. ID NO: 344)  
5'- TG GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 335) (SEQ. ID NO: 345)  
5'- TG GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 336) (SEQ. ID NO: 346)  
5'- TG GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 337) (SEQ. ID NO: 347)  
5'- TG GAA AGC TGA GAT GGA GGG CG -3' (FRAG 338) (SEQ. ID NO: 348)  
5'- TG GAA AGC TGA GAT GGA GGG C -3' (FRAG 339) (SEQ. ID NO: 349)  
5'- TG GAA AGC TGA GAT GGA GGG -3' (FRAG 340) (SEQ. ID NO: 350)  
5'- TG GAA AGC TGA GAT GGA GG -3' (FRAG 341) (SEQ. ID NO: 351)  
5'- TG GAA AGC TGA GAT GGA G -3' (FRAG 342) (SEQ. ID NO: 352)  
5'- TG GAA AGC TGA GAT GGA -3' (FRAG 343) (SEQ. ID NO: 353)



- 5'- TG GAA AGC TGA GAT GG -3' (FRAG 344) (SEQ. ID NO: 354)  
5'- TG GAA AGC TGA GAT G -3' (FRAG 345) (SEQ. ID NO: 355)  
5'- TG GAA AGC TGA GAT -3' (FRAG 346) (SEQ. ID NO: 356)  
5'- TG GAA AGC TGA GA-3' (FRAG 347) (SEQ. ID NO: 357)  
5'- TG GAA AGC TGA G-3' (FRAG 348) (SEQ. ID NO: 358)  
5'- TG GAA AGC TGA-3' (FRAG 349) (SEQ. ID NO: 359)  
5'- TG GAA AGC TG-3' (FRAG 350) (SEQ. ID NO: 360)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 351) (SEQ. ID NO: 361)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 352) (SEQ. ID NO: 362)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 353) (SEQ. ID NO: 363)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 354) (SEQ. ID NO: 364)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 355) (SEQ. ID NO: 365)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 356) (SEQ. ID NO: 366)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 357) (SEQ. ID NO: 367)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 358) (SEQ. ID NO: 368)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 359) (SEQ. ID NO: 369)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 360) (SEQ. ID NO: 370)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 361) (SEQ. ID NO: 371)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 362) (SEQ. ID NO: 372)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 363) (SEQ. ID NO: 373)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 364) (SEQ. ID NO: 374)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 365) (SEQ. ID NO: 375)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 366) (SEQ. ID NO: 376)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 367) (SEQ. ID NO: 377)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 368) (SEQ. ID NO: 378)  
5'- G GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 369) (SEQ. ID NO: 379)  
5'- G GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 370) (SEQ. ID NO: 380)  
5'- G GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 371) (SEQ. ID NO: 381)  
5'- G GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 372) (SEQ. ID NO: 382)  
5'- G GAA AGC TGA GAT GGA GGG CG -3' (FRAG 373) (SEQ. ID NO: 383)  
5'- G GAA AGC TGA GAT GGA GGG C -3' (FRAG 374) (SEQ. ID NO: 384)  
5'- G GAA AGC TGA GAT GGA GGG -3' (FRAG 375) (SEQ. ID NO: 385)  
5'- G GAA AGC TGA GAT GGA GG -3' (FRAG 376) (SEQ. ID NO: 386)  
5'- G GAA AGC TGA GAT GGA G -3' (FRAG 377) (SEQ. ID NO: 387)  
5'- G GAA AGC TGA GAT GGA -3' (FRAG 378) (SEQ. ID NO: 388)  
5'- G GAA AGC TGA GAT GG -3' (FRAG 379) (SEQ. ID NO: 389)  
5'- G GAA AGC TGA GAT G -3' (FRAG 380) (SEQ. ID NO: 390)  
5'- G GAA AGC TGA GAT -3' (FRAG 381) (SEQ. ID NO: 391)  
5'- G GAA AGC TGA GA-3' (FRAG 382) (SEQ. ID NO: 392)  
5'- G GAA AGC TGA G-3' (FRAG 383) (SEQ. ID NO: 393)  
5'- G GAA AGC TGA-3' (FRAG 384) (SEQ. ID NO: 394)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 385) (SEQ. ID NO: 395)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 386) (SEQ. ID NO: 396)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 387) (SEQ. ID NO: 397)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 388) (SEQ. ID NO: 398)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 389) (SEQ. ID NO: 399)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 390) (SEQ. ID NO: 400)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 391) (SEQ. ID NO: 401)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 392) (SEQ. ID NO: 402)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 393) (SEQ. ID NO: 403)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 394) (SEQ. ID NO: 404)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 395) (SEQ. ID NO: 405)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 396) (SEQ. ID NO: 406)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 397) (SEQ. ID NO: 407)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 398) (SEQ. ID NO: 408)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 399) (SEQ. ID NO: 409)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 400) (SEQ. ID NO: 410)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 401) (SEQ. ID NO: 411)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 402) (SEQ. ID NO: 412)  
5'- GAA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 403) (SEQ. ID NO: 413)  
5'- GAA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 404) (SEQ. ID NO: 414)  
5'- GAA AGC TGA GAT GGA GGG CGG C-3' (FRAG 405) (SEQ. ID NO: 415)  
5'- GAA AGC TGA GAT GGA GGG CGG -3' (FRAG 406) (SEQ. ID NO: 416)  
5'- GAA AGC TGA GAT GGA GGG CG -3' (FRAG 407) (SEQ. ID NO: 417)  
5'- GAA AGC TGA GAT GGA GGG C -3' (FRAG 408) (SEQ. ID NO: 418)  
5'- GAA AGC TGA GAT GGA GGG -3' (FRAG 409) (SEQ. ID NO: 419)  
5'- GAA AGC TGA GAT GGA GG -3' (FRAG 410) (SEQ. ID NO: 420)  
5'- GAA AGC TGA GAT GGA G -3' (FRAG 411) (SEQ. ID NO: 421)  
5'- GAA AGC TGA GAT GGA -3' (FRAG 412) (SEQ. ID NO: 422)

- 5'- GAA AGC TGA GAT GG -3' (FRAG 413) (SEQ. ID NO: 423)  
5'- GAA AGC TGA GAT G -3' (FRAG 414) (SEQ. ID NO: 424)  
5'- GAA AGC TGA GAT -3' (FRAG 415) (SEQ. ID NO: 425)  
5'- GAA AGC TGA GA-3' (FRAG 416) (SEQ. ID NO: 426)  
5'- GAA AGC TGA G-3' (FRAG 417) (SEQ. ID NO: 427)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 418) (SEQ. ID NO: 428)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 419) (SEQ. ID NO: 429)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 420) (SEQ. ID NO: 430)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 421) (SEQ. ID NO: 431)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 422) (SEQ. ID NO: 432)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 423) (SEQ. ID NO: 433)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 424) (SEQ. ID NO: 434)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 425) (SEQ. ID NO: 435)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 426) (SEQ. ID NO: 436)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 427) (SEQ. ID NO: 437)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 428) (SEQ. ID NO: 438)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 429) (SEQ. ID NO: 439)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 430) (SEQ. ID NO: 440)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 431) (SEQ. ID NO: 441)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 432) (SEQ. ID NO: 442)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 433) (SEQ. ID NO: 443)  
5'- AA AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 434) (SEQ. ID NO: 444)  
5'- AA AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 435) (SEQ. ID NO: 445)  
5'- AA AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 436) (SEQ. ID NO: 446)  
5'- AA AGC TGA GAT GGA GGG CGG CA-3' (FRAG 437) (SEQ. ID NO: 447)  
5'- AA AGC TGA GAT GGA GGG CGG C-3' (FRAG 438) (SEQ. ID NO: 448)  
5'- AA AGC TGA GAT GGA GGG CGG -3' (FRAG 439) (SEQ. ID NO: 449)  
5'- AA AGC TGA GAT GGA GGG CG -3' (FRAG 440) (SEQ. ID NO: 450)  
5'- AA AGC TGA GAT GGA GGG C -3' (FRAG 441) (SEQ. ID NO: 451)  
5'- AA AGC TGA GAT GGA GGG -3' (FRAG 442) (SEQ. ID NO: 452)  
5'- AA AGC TGA GAT GGA GG -3' (FRAG 443) (SEQ. ID NO: 453)  
5'- AA AGC TGA GAT GGA G -3' (FRAG 444) (SEQ. ID NO: 454)  
5'- AA AGC TGA GAT GGA -3' (FRAG 445) (SEQ. ID NO: 455)  
5'- AA AGC TGA GAT GG -3' (FRAG 446) (SEQ. ID NO: 456)  
5'- AA AGC TGA GAT G -3' (FRAG 447) (SEQ. ID NO: 457)  
5'- AA AGC TGA GAT -3' (FRAG 448) (SEQ. ID NO: 458)  
5'- AA AGC TGA GA-3' (FRAG 449) (SEQ. ID NO: 459)  
5'- A AGC TGA GAT GGA GGG CG G CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 450) (SEQ. ID NO: 460)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 451) (SEQ. ID NO: 461)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 452) (SEQ. ID NO: 462)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 453) (SEQ. ID NO: 463)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 454) (SEQ. ID NO: 464)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 455) (SEQ. ID NO: 465)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 456) (SEQ. ID NO: 466)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 457) (SEQ. ID NO: 467)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 458) (SEQ. ID NO: 468)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 459) (SEQ. ID NO: 469)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 460) (SEQ. ID NO: 470)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 461) (SEQ. ID NO: 471)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 462) (SEQ. ID NO: 472)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 463) (SEQ. ID NO: 473)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 464) (SEQ. ID NO: 474)  
5'- A AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 465) (SEQ. ID NO: 475)  
5'- A AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 466) (SEQ. ID NO: 476)  
5'- A AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 467) (SEQ. ID NO: 477)  
5'- A AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 468) (SEQ. ID NO: 478)  
5'- A AGC TGA GAT GGA GGG CGG CA-3' (FRAG 469) (SEQ. ID NO: 479)  
5'- A AGC TGA GAT GGA GGG CGG C-3' (FRAG 470) (SEQ. ID NO: 480)  
5'- A AGC TGA GAT GGA GGG CGG -3' (FRAG 471) (SEQ. ID NO: 481)  
5'- A AGC TGA GAT GGA GGG CG -3' (FRAG 472) (SEQ. ID NO: 482)  
5'- A AGC TGA GAT GGA GGG C -3' (FRAG 473) (SEQ. ID NO: 483)  
5'- A AGC TGA GAT GGA GGG -3' (FRAG 474) (SEQ. ID NO: 484)  
5'- A AGC TGA GAT GGA GG -3' (FRAG 475) (SEQ. ID NO: 485)  
5'- A AGC TGA GAT GGA G -3' (FRAG 476) (SEQ. ID NO: 486)  
5'- A AGC TGA GAT GGA -3' (FRAG 477) (SEQ. ID NO: 487)  
5'- A AGC TGA GAT GG -3' (FRAG 478) (SEQ. ID NO: 488)  
5'- A AGC TGA GAT G -3' (FRAG 479) (SEQ. ID NO: 489)  
5'- A AGC TGA GAT -3' (FRAG 480) (SEQ. ID NO: 490)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 481) (SEQ. ID NO: 491)

5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 482) (SEQ. ID NO: 492)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 483) (SEQ. ID NO: 493)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 484) (SEQ. ID NO: 494)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 485) (SEQ. ID NO: 495)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 486) (SEQ. ID NO: 496)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 487) (SEQ. ID NO: 497)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 488) (SEQ. ID NO: 498)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 489) (SEQ. ID NO: 499)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 490) (SEQ. ID NO: 500)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 491) (SEQ. ID NO: 501)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 492) (SEQ. ID NO: 502)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 493) (SEQ. ID NO: 503)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 494) (SEQ. ID NO: 504)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 495) (SEQ. ID NO: 505)  
5'- AGC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 496) (SEQ. ID NO: 506)  
5'- AGC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 497) (SEQ. ID NO: 507)  
5'- AGC TGA GAT GGA GGG CGG CAT G -3' (FRAG 498) (SEQ. ID NO: 508)  
5'- AGC TGA GAT GGA GGG CGG CAT -3' (FRAG 499) (SEQ. ID NO: 509)  
5'- AGC TGA GAT GGA GGG CGG CA-3' (FRAG 500) (SEQ. ID NO: 510)  
5'- AGC TGA GAT GGA GGG CGG C-3' (FRAG 501) (SEQ. ID NO: 511)  
5'- AGC TGA GAT GGA GGG CGG -3' (FRAG 502) (SEQ. ID NO: 512)  
5'- AGC TGA GAT GGA GGG CG -3' (FRAG 503) (SEQ. ID NO: 513)  
5'- AGC TGA GAT GGA GGG C -3' (FRAG 504) (SEQ. ID NO: 514)  
5'- AGC TGA GAT GGA GGG -3' (FRAG 505) (SEQ. ID NO: 515)  
5'- AGC TGA GAT GGA GG -3' (FRAG 506) (SEQ. ID NO: 516)  
5'- AGC TGA GAT GGA G -3' (FRAG 507) (SEQ. ID NO: 517)  
5'- AGC TGA GAT GGA -3' (FRAG 508) (SEQ. ID NO: 518)  
5'- AGC TGA GAT GG -3' (FRAG 509) (SEQ. ID NO: 519)  
5'- AGC TGA GAT G -3' (FRAG 510) (SEQ. ID NO: 520)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 511) (SEQ. ID NO: 521)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 512) (SEQ. ID NO: 522)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 513) (SEQ. ID NO: 523)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 514) (SEQ. ID NO: 524)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 515) (SEQ. ID NO: 525)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 516) (SEQ. ID NO: 526)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 517) (SEQ. ID NO: 527)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 518) (SEQ. ID NO: 528)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 519) (SEQ. ID NO: 529)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 520) (SEQ. ID NO: 530)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 521) (SEQ. ID NO: 531)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 522) (SEQ. ID NO: 532)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 523) (SEQ. ID NO: 533)  
5'- GC TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 524) (SEQ. ID NO: 534)  
5'- GC TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 525) (SEQ. ID NO: 535)  
5'- GC TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 526) (SEQ. ID NO: 536)  
5'- GC TGA GAT GGA GGG CGG CAT GG -3' (FRAG 527) (SEQ. ID NO: 537)  
5'- GC TGA GAT GGA GGG CGG CAT G -3' (FRAG 528) (SEQ. ID NO: 538)  
5'- GC TGA GAT GGA GGG CGG CAT -3' (FRAG 529) (SEQ. ID NO: 539)  
5'- GC TGA GAT GGA GGG CGG CA-3' (FRAG 530) (SEQ. ID NO: 540)  
5'- GC TGA GAT GGA GGG CGG C-3' (FRAG 531) (SEQ. ID NO: 541)  
5'- GC TGA GAT GGA GGG CGG -3' (FRAG 532) (SEQ. ID NO: 542)  
5'- GC TGA GAT GGA GGG CG -3' (FRAG 533) (SEQ. ID NO: 543)  
5'- GC TGA GAT GGA GGG C -3' (FRAG 534) (SEQ. ID NO: 544)  
5'- GC TGA GAT GGA GGG -3' (FRAG 535) (SEQ. ID NO: 545)  
5'- GC TGA GAT GGA GG -3' (FRAG 536) (SEQ. ID NO: 546)  
5'- GC TGA GAT GGA G -3' (FRAG 537) (SEQ. ID NO: 547)  
5'- GC TGA GAT GGA -3' (FRAG 538) (SEQ. ID NO: 548)  
5'- GC TGA GAT GG -3' (FRAG 539) (SEQ. ID NO: 549)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 540) (SEQ. ID NO: 550)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 541) (SEQ. ID NO: 551)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 542) (SEQ. ID NO: 552)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 543) (SEQ. ID NO: 553)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 544) (SEQ. ID NO: 554)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 545) (SEQ. ID NO: 555)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 546) (SEQ. ID NO: 556)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 547) (SEQ. ID NO: 557)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 548) (SEQ. ID NO: 558)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 549) (SEQ. ID NO: 559)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 550) (SEQ. ID NO: 560)

EPI-109

95

5'- C TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 551) (SEQ. ID NO: 561)  
5'- C TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 552) (SEQ. ID NO: 562)  
5'- C TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 553) (SEQ. ID NO: 563)  
5'- C TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 554) (SEQ. ID NO: 564)  
5'- C TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 555) (SEQ. ID NO: 565)  
5'- C TGA GAT GGA GGG CGG CAT GG -3' (FRAG 556) (SEQ. ID NO: 566)  
5'- C TGA GAT GGA GGG CGG CAT G -3' (FRAG 557) (SEQ. ID NO: 567)  
5'- C TGA GAT GGA GGG CGG CAT -3' (FRAG 558) (SEQ. ID NO: 568)  
5'- C TGA GAT GGA GGG CGG CA-3' (FRAG 559) (SEQ. ID NO: 569)  
5'- C TGA GAT GGA GGG CGG C-3' (FRAG 560) (SEQ. ID NO: 570)  
5'- C TGA GAT GGA GGG CGG -3' (FRAG 561) (SEQ. ID NO: 571)  
5'- C TGA GAT GGA GGG CG -3' (FRAG 562) (SEQ. ID NO: 572)  
5'- C TGA GAT GGA GGG C -3' (FRAG 563) (SEQ. ID NO: 573)  
5'- C TGA GAT GGA GGG -3' (FRAG 564) (SEQ. ID NO: 574)  
5'- C TGA GAT GGA GG -3' (FRAG 565) (SEQ. ID NO: 575)  
5'- C TGA GAT GGA G -3' (FRAG 566) (SEQ. ID NO: 576)  
5'- C TGA GAT GGA -3' (FRAG 567) (SEQ. ID NO: 577)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 568) (SEQ. ID NO: 578)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 569) (SEQ. ID NO: 579)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 570) (SEQ. ID NO: 580)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 571) (SEQ. ID NO: 581)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 572) (SEQ. ID NO: 582)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 573) (SEQ. ID NO: 583)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 574) (SEQ. ID NO: 584)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 575) (SEQ. ID NO: 585)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 576) (SEQ. ID NO: 586)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 577) (SEQ. ID NO: 587)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 578) (SEQ. ID NO: 588)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 579) (SEQ. ID NO: 589)  
5'- TGA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 580) (SEQ. ID NO: 590)  
5'- TGA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 581) (SEQ. ID NO: 591)  
5'- TGA GAT GGA GGG CGG CAT GGC G-3' (FRAG 582) (SEQ. ID NO: 592)  
5'- TGA GAT GGA GGG CGG CAT GGC -3' (FRAG 583) (SEQ. ID NO: 593)  
5'- TGA GAT GGA GGG CGG CAT GG -3' (FRAG 584) (SEQ. ID NO: 594)  
5'- TGA GAT GGA GGG CGG CAT G -3' (FRAG 585) (SEQ. ID NO: 595)  
5'- TGA GAT GGA GGG CGG CAT -3' (FRAG 586) (SEQ. ID NO: 596)  
5'- TGA GAT GGA GGG CGG CA-3' (FRAG 587) (SEQ. ID NO: 597)  
5'- TGA GAT GGA GGG CGG C-3' (FRAG 588) (SEQ. ID NO: 598)  
5'- TGA GAT GGA GGG CGG -3' (FRAG 589) (SEQ. ID NO: 599)  
5'- TGA GAT GGA GGG CG -3' (FRAG 590) (SEQ. ID NO: 600)  
5'- TGA GAT GGA GGG C -3' (FRAG 591) (SEQ. ID NO: 601)  
5'- TGA GAT GGA GGG -3' (FRAG 592) (SEQ. ID NO: 602)  
5'- TGA GAT GGA GG -3' (FRAG 593) (SEQ. ID NO: 603)  
5'- TGA GAT GGA G -3' (FRAG 594) (SEQ. ID NO: 604)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 595) (SEQ. ID NO: 605)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 596) (SEQ. ID NO: 606)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 597) (SEQ. ID NO: 607)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 598) (SEQ. ID NO: 608)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 599) (SEQ. ID NO: 609)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 600) (SEQ. ID NO: 610)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 601) (SEQ. ID NO: 611)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 602) (SEQ. ID NO: 612)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 603) (SEQ. ID NO: 613)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 604) (SEQ. ID NO: 614)  
5'- GA GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 605) (SEQ. ID NO: 615)  
5'- GA GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 606) (SEQ. ID NO: 616)  
5'- GA GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 607) (SEQ. ID NO: 617)  
5'- GA GAT GGA GGG CGG CAT GGC GG-3' (FRAG 608) (SEQ. ID NO: 618)  
5'- GA GAT GGA GGG CGG CAT GGC G-3' (FRAG 609) (SEQ. ID NO: 619)  
5'- GA GAT GGA GGG CGG CAT GGC -3' (FRAG 610) (SEQ. ID NO: 620)  
5'- GA GAT GGA GGG CGG CAT GG -3' (FRAG 611) (SEQ. ID NO: 621)  
5'- GA GAT GGA GGG CGG CAT G -3' (FRAG 612) (SEQ. ID NO: 622)  
5'- GA GAT GGA GGG CGG CAT -3' (FRAG 613) (SEQ. ID NO: 623)  
5'- GA GAT GGA GGG CGG CA-3' (FRAG 614) (SEQ. ID NO: 624)  
5'- GA GAT GGA GGG CGG C-3' (FRAG 615) (SEQ. ID NO: 625)  
5'- GA GAT GGA GGG CGG -3' (FRAG 616) (SEQ. ID NO: 626)  
5'- GA GAT GGA GGG CG -3' (FRAG 617) (SEQ. ID NO: 627)  
5'- GA GAT GGA GGG C -3' (FRAG 618) (SEQ. ID NO: 628)  
5'- GA GAT GGA GGG -3' (FRAG 619) (SEQ. ID NO: 629)

5'- GA GAT GGA GG -3' (FRAG 620) (SEQ. ID NO: 630)  
5'- A GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 621) (SEQ. ID NO: 631)  
5'- A GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 622) (SEQ. ID NO: 632)  
5'- A GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 623) (SEQ. ID NO: 633)  
5'- A GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 624) (SEQ. ID NO: 634)  
5'- A GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 625) (SEQ. ID NO: 635)  
5'- A GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 626) (SEQ. ID NO: 636)  
5'- A GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 627) (SEQ. ID NO: 637)  
5'- A GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 628) (SEQ. ID NO: 638)  
5'- A GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 629) (SEQ. ID NO: 639)  
5'- A GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 630) (SEQ. ID NO: 640)  
5'- A GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 631) (SEQ. ID NO: 641)  
5'- A GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 632) (SEQ. ID NO: 642)  
5'- A GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 633) (SEQ. ID NO: 643)  
5'- A GAT GGA GGG CGG CAT GGC GG-3' (FRAG 634) (SEQ. ID NO: 644)  
5'- A GAT GGA GGG CGG CAT GGC G-3' (FRAG 635) (SEQ. ID NO: 645)  
5'- A GAT GGA GGG CGG CAT GGC -3' (FRAG 636) (SEQ. ID NO: 646)  
5'- A GAT GGA GGG CGG CAT GG -3' (FRAG 637) (SEQ. ID NO: 647)  
5'- A GAT GGA GGG CGG CAT G -3' (FRAG 638) (SEQ. ID NO: 648)  
5'- A GAT GGA GGG CGG CAT -3' (FRAG 639) (SEQ. ID NO: 649)  
5'- A GAT GGA GGG CGG CA-3' (FRAG 640) (SEQ. ID NO: 650)  
5'- A GAT GGA GGG CGG C-3' (FRAG 641) (SEQ. ID NO: 651)  
5'- A GAT GGA GGG CGG -3' (FRAG 642) (SEQ. ID NO: 652)  
5'- A GAT GGA GGG CG -3' (FRAG 643) (SEQ. ID NO: 653)  
5'- A GAT GGA GGG C -3' (FRAG 644) (SEQ. ID NO: 654)  
5'- A GAT GGA GGG -3' (FRAG 645) (SEQ. ID NO: 655)  
5'- GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 646) (SEQ. ID NO: 656)  
5'- GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 647) (SEQ. ID NO: 657)  
5'- GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 648) (SEQ. ID NO: 658)  
5'- GAT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 649) (SEQ. ID NO: 659)  
5'- GAT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 650) (SEQ. ID NO: 660)  
5'- GAT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 651) (SEQ. ID NO: 661)  
5'- GAT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 652) (SEQ. ID NO: 662)  
5'- GAT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 653) (SEQ. ID NO: 663)  
5'- GAT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 654) (SEQ. ID NO: 664)  
5'- GAT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 655) (SEQ. ID NO: 665)  
5'- GAT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 656) (SEQ. ID NO: 666)  
5'- GAT GGA GGG CGG CAT GGC GGG C-3' (FRAG 657) (SEQ. ID NO: 667)  
5'- GAT GGA GGG CGG CAT GGC GGG -3' (FRAG 658) (SEQ. ID NO: 668)  
5'- GAT GGA GGG CGG CAT GGC GG-3' (FRAG 659) (SEQ. ID NO: 669)  
5'- GAT GGA GGG CGG CAT GGC G-3' (FRAG 660) (SEQ. ID NO: 670)  
5'- GAT GGA GGG CGG CAT GGC -3' (FRAG 661) (SEQ. ID NO: 671)  
5'- GAT GGA GGG CGG CAT GG -3' (FRAG 662) (SEQ. ID NO: 672)  
5'- GAT GGA GGG CGG CAT G -3' (FRAG 663) (SEQ. ID NO: 673)  
5'- GAT GGA GGG CGG CAT -3' (FRAG 664) (SEQ. ID NO: 674)  
5'- GAT GGA GGG CGG CA-3' (FRAG 665) (SEQ. ID NO: 675)  
5'- GAT GGA GGG CGG C-3' (FRAG 666) (SEQ. ID NO: 676)  
5'- GAT GGA GGG CGG -3' (FRAG 667) (SEQ. ID NO: 677)  
5'- GAT GGA GGG CG -3' (FRAG 668) (SEQ. ID NO: 678)  
5'- GAT GGA GGG C -3' (FRAG 669) (SEQ. ID NO: 679)  
5'- AT GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 670) (SEQ. ID NO: 680)  
5'- AT GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 671) (SEQ. ID NO: 681)  
5'- AT GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 672) (SEQ. ID NO: 682)  
5'- AT GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 673) (SEQ. ID NO: 683)  
5'- AT GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 674) (SEQ. ID NO: 684)  
5'- AT GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 675) (SEQ. ID NO: 685)  
5'- AT GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 676) (SEQ. ID NO: 686)  
5'- AT GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 677) (SEQ. ID NO: 687)  
5'- AT GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 678) (SEQ. ID NO: 688)  
5'- AT GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 679) (SEQ. ID NO: 689)  
5'- AT GGA GGG CGG CAT GGC GGG CA-3' (FRAG 680) (SEQ. ID NO: 690)  
5'- AT GGA GGG CGG CAT GGC GGG C-3' (FRAG 681) (SEQ. ID NO: 691)  
5'- AT GGA GGG CGG CAT GGC GGG -3' (FRAG 682) (SEQ. ID NO: 692)  
5'- AT GGA GGG CGG CAT GGC GG-3' (FRAG 683) (SEQ. ID NO: 693)  
5'- AT GGA GGG CGG CAT GGC G-3' (FRAG 684) (SEQ. ID NO: 694)  
5'- AT GGA GGG CGG CAT GGC -3' (FRAG 685) (SEQ. ID NO: 695)  
5'- AT GGA GGG CGG CAT GG -3' (FRAG 686) (SEQ. ID NO: 696)  
5'- AT GGA GGG CGG CAT G -3' (FRAG 687) (SEQ. ID NO: 697)  
5'- AT GGA GGG CGG CAT -3' (FRAG 688) (SEQ. ID NO: 698)

5'- AT GGA GGG CGG CA-3' (FRAG 689) (SEQ. ID NO: 699)  
5'- AT GGA GGG CGG C-3' (FRAG 690) (SEQ. ID NO: 700)  
5'- AT GGA GGG CGG -3' (FRAG 691) (SEQ. ID NO: 701)  
5'- AT GGA GGG CG -3' (FRAG 692) (SEQ. ID NO: 702)  
5'- T GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 693) (SEQ. ID NO: 703)  
5'- T GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 694) (SEQ. ID NO: 704)  
5'- T GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 695) (SEQ. ID NO: 705)  
5'- T GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 696) (SEQ. ID NO: 706)  
5'- T GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 697) (SEQ. ID NO: 707)  
5'- T GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 698) (SEQ. ID NO: 708)  
5'- T GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 699) (SEQ. ID NO: 709)  
5'- T GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 700) (SEQ. ID NO: 710)  
5'- T GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 701) (SEQ. ID NO: 711)  
5'- T GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 702) (SEQ. ID NO: 712)  
5'- T GGA GGG CGG CAT GGC GGG CA-3' (FRAG 703) (SEQ. ID NO: 713)  
5'- T GGA GGG CGG CAT GGC GGG C-3' (FRAG 704) (SEQ. ID NO: 714)  
5'- T GGA GGG CGG CAT GGC GGG -3' (FRAG 705) (SEQ. ID NO: 715)  
5'- T GGA GGG CGG CAT GGC GG-3' (FRAG 706) (SEQ. ID NO: 716)  
5'- T GGA GGG CGG CAT GGC G-3' (FRAG 707) (SEQ. ID NO: 717)  
5'- T GGA GGG CGG CAT GGC -3' (FRAG 708) (SEQ. ID NO: 718)  
5'- T GGA GGG CGG CAT GG -3' (FRAG 709) (SEQ. ID NO: 719)  
5'- T GGA GGG CGG CAT G -3' (FRAG 710) (SEQ. ID NO: 720)  
5'- T GGA GGG CGG CAT -3' (FRAG 711) (SEQ. ID NO: 721)  
5'- T GGA GGG CGG CA-3' (FRAG 712) (SEQ. ID NO: 722)  
5'- T GGA GGG CGG C-3' (FRAG 713) (SEQ. ID NO: 723)  
5'- T GGA GGG CGG -3' (FRAG 714) (SEQ. ID NO: 724)  
5'- GGA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 715) (SEQ. ID NO: 725)  
5'- GGA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 716) (SEQ. ID NO: 726)  
5'- GGA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 717) (SEQ. ID NO: 727)  
5'- GGA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 718) (SEQ. ID NO: 728)  
5'- GGA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 719) (SEQ. ID NO: 729)  
5'- GGA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 720) (SEQ. ID NO: 730)  
5'- GGA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 721) (SEQ. ID NO: 731)  
5'- GGA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 722) (SEQ. ID NO: 732)  
5'- GGA GGG CGG CAT GGC GGG CAC A-3' (FRAG 723) (SEQ. ID NO: 733)  
5'- GGA GGG CGG CAT GGC GGG CAC-3' (FRAG 724) (SEQ. ID NO: 734)  
5'- GGA GGG CGG CAT GGC GGG CA-3' (FRAG 725) (SEQ. ID NO: 735)  
5'- GGA GGG CGG CAT GGC GGG C-3' (FRAG 726) (SEQ. ID NO: 736)  
5'- GGA GGG CGG CAT GGC GGG -3' (FRAG 727) (SEQ. ID NO: 737)  
5'- GGA GGG CGG CAT GGC GG-3' (FRAG 728) (SEQ. ID NO: 738)  
5'- GGA GGG CGG CAT GGC G-3' (FRAG 729) (SEQ. ID NO: 739)  
5'- GGA GGG CGG CAT GGC -3' (FRAG 730) (SEQ. ID NO: 740)  
5'- GGA GGG CGG CAT GG -3' (FRAG 731) (SEQ. ID NO: 741)  
5'- GGA GGG CGG CAT G -3' (FRAG 732) (SEQ. ID NO: 742)  
5'- GGA GGG CGG CAT -3' (FRAG 733) (SEQ. ID NO: 743)  
5'- GGA GGG CGG CA-3' (FRAG 734) (SEQ. ID NO: 744)  
5'- GGA GGG CGG C-3' (FRAG 735) (SEQ. ID NO: 745)  
5'- GA GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 736) (SEQ. ID NO: 746)  
5'- GA GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 737) (SEQ. ID NO: 747)  
5'- GA GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 738) (SEQ. ID NO: 748)  
5'- GA GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 739) (SEQ. ID NO: 749)  
5'- GA GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 740) (SEQ. ID NO: 750)  
5'- GA GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 741) (SEQ. ID NO: 751)  
5'- GA GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 742) (SEQ. ID NO: 752)  
5'- GA GGG CGG CAT GGC GGG CAC AG-3' (FRAG 743) (SEQ. ID NO: 753)  
5'- GA GGG CGG CAT GGC GGG CAC A-3' (FRAG 744) (SEQ. ID NO: 754)  
5'- GA GGG CGG CAT GGC GGG CAC-3' (FRAG 745) (SEQ. ID NO: 755)  
5'- GA GGG CGG CAT GGC GGG CA-3' (FRAG 746) (SEQ. ID NO: 756)  
5'- GA GGG CGG CAT GGC GGG C-3' (FRAG 747) (SEQ. ID NO: 757)  
5'- GA GGG CGG CAT GGC GGG -3' (FRAG 748) (SEQ. ID NO: 758)  
5'- GA GGG CGG CAT GGC GG-3' (FRAG 749) (SEQ. ID NO: 759)  
5'- GA GGG CGG CAT GGC G-3' (FRAG 750) (SEQ. ID NO: 760)  
5'- GA GGG CGG CAT GGC -3' (FRAG 751) (SEQ. ID NO: 761)  
5'- GA GGG CGG CAT GG -3' (FRAG 752) (SEQ. ID NO: 762)  
5'- GA GGG CGG CAT G -3' (FRAG 753) (SEQ. ID NO: 763)  
5'- GA GGG CGG CAT -3' (FRAG 754) (SEQ. ID NO: 764)  
5'- GA GGG CGG CA-3' (FRAG 755) (SEQ. ID NO: 765)  
5'- A GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 756) (SEQ. ID NO: 766)  
5'- A GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 757) (SEQ. ID NO: 767)



- 5'- A GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 758) (SEQ. ID NO: 768)  
5'- A GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 759) (SEQ. ID NO: 769)  
5'- A GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 760) (SEQ. ID NO: 770)  
5'- A GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 761) (SEQ. ID NO: 771)  
5'- A GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 762) (SEQ. ID NO: 772)  
5'- A GGG CGG CAT GGC GGG CAC AG-3' (FRAG 763) (SEQ. ID NO: 773)  
5'- A GGG CGG CAT GGC GGG CAC A-3' (FRAG 764) (SEQ. ID NO: 774)  
5'- A GGG CGG CAT GGC GGG CAC-3' (FRAG 765) (SEQ. ID NO: 775)  
5'- A GGG CGG CAT GGC GGG CA-3' (FRAG 766) (SEQ. ID NO: 776)  
5'- A GGG CGG CAT GGC GGG C-3' (FRAG 767) (SEQ. ID NO: 777)  
5'- A GGG CGG CAT GGC GGG -3' (FRAG 768) (SEQ. ID NO: 778)  
5'- A GGG CGG CAT GGC GG-3' (FRAG 769) (SEQ. ID NO: 779)  
5'- A GGG CGG CAT GGC G-3' (FRAG 770) (SEQ. ID NO: 780)  
5'- A GGG CGG CAT GGC -3' (FRAG 771) (SEQ. ID NO: 781)  
5'- A GGG CGG CAT GG -3' (FRAG 772) (SEQ. ID NO: 782)  
5'- A GGG CGG CAT G -3' (FRAG 773) (SEQ. ID NO: 783)  
5'- A GGG CGG CAT -3' (FRAG 774) (SEQ. ID NO: 784)  
5'- GGG CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 775) (SEQ. ID NO: 785)  
5'- GGG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 776) (SEQ. ID NO: 786)  
5'- GGG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 777) (SEQ. ID NO: 787)  
5'- GGG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 778) (SEQ. ID NO: 788)  
5'- GGG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 779) (SEQ. ID NO: 789)  
5'- GGG CGG CAT GGC GGG CAC AGG C-3' (FRAG 780) (SEQ. ID NO: 790)  
5'- GGG CGG CAT GGC GGG CAC AGG -3' (FRAG 781) (SEQ. ID NO: 791)  
5'- GGG CGG CAT GGC GGG CAC AG-3' (FRAG 782) (SEQ. ID NO: 792)  
5'- GGG CGG CAT GGC GGG CAC A-3' (FRAG 783) (SEQ. ID NO: 793)  
5'- GGG CGG CAT GGC GGG CAC-3' (FRAG 784) (SEQ. ID NO: 794)  
5'- GGG CGG CAT GGC GGG CA-3' (FRAG 785) (SEQ. ID NO: 795)  
5'- GGG CGG CAT GGC GGG C-3' (FRAG 786) (SEQ. ID NO: 796)  
5'- GGG CGG CAT GGC GGG -3' (FRAG 787) (SEQ. ID NO: 797)  
5'- GGG CGG CAT GGC GG-3' (FRAG 788) (SEQ. ID NO: 798)  
5'- GGG CGG CAT GGC G-3' (FRAG 789) (SEQ. ID NO: 799)  
5'- GGG CGG CAT GGC -3' (FRAG 790) (SEQ. ID NO: 800)  
5'- GGG CGG CAT GG -3' (FRAG 791) (SEQ. ID NO: 801)  
5'- GGG CGG CAT G -3' (FRAG 792) (SEQ. ID NO: 802)  
5'- GG CGG CAT GGC GGG CAC AG G CTG GGC-3' (FRAG 793) (SEQ. ID NO: 803)  
5'- GG CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 794) (SEQ. ID NO: 804)  
5'- GG CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 795) (SEQ. ID NO: 805)  
5'- GG CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 796) (SEQ. ID NO: 806)  
5'- GG CGG CAT GGC GGG CAC AGG CT-3' (FRAG 797) (SEQ. ID NO: 807)  
5'- GG CGG CAT GGC GGG CAC AGG C-3' (FRAG 798) (SEQ. ID NO: 808)  
5'- GG CGG CAT GGC GGG CAC AGG -3' (FRAG 799) (SEQ. ID NO: 809)  
5'- GG CGG CAT GGC GGG CAC AG-3' (FRAG 800) (SEQ. ID NO: 810)  
5'- GG CGG CAT GGC GGG CAC A-3' (FRAG 801) (SEQ. ID NO: 811)  
5'- GG CGG CAT GGC GGG CAC-3' (FRAG 802) (SEQ. ID NO: 812)  
5'- GG CGG CAT GGC GGG CA-3' (FRAG 803) (SEQ. ID NO: 813)  
5'- GG CGG CAT GGC GGG C-3' (FRAG 804) (SEQ. ID NO: 814)  
5'- GG CGG CAT GGC GGG -3' (FRAG 805) (SEQ. ID NO: 815)  
5'- GG CGG CAT GGC GG-3' (FRAG 806) (SEQ. ID NO: 816)  
5'- GG CGG CAT GGC G-3' (FRAG 807) (SEQ. ID NO: 817)  
5'- GG CGG CAT GGC -3' (FRAG 808) (SEQ. ID NO: 818)  
5'- GG CGG CAT GG -3' (FRAG 809) (SEQ. ID NO: 819)  
5'- G CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 810) (SEQ. ID NO: 820)  
5'- G CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 811) (SEQ. ID NO: 821)  
5'- G CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 812) (SEQ. ID NO: 822)  
5'- G CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 813) (SEQ. ID NO: 823)  
5'- G CGG CAT GGC GGG CAC AGG CT-3' (FRAG 814) (SEQ. ID NO: 824)  
5'- G CGG CAT GGC GGG CAC AGG C-3' (FRAG 815) (SEQ. ID NO: 825)  
5'- G CGG CAT GGC GGG CAC AGG -3' (FRAG 816) (SEQ. ID NO: 826)  
5'- G CGG CAT GGC GGG CAC AG-3' (FRAG 817) (SEQ. ID NO: 827)  
5'- G CGG CAT GGC GGG CAC A-3' (FRAG 818) (SEQ. ID NO: 828)  
5'- G CGG CAT GGC GGG CAC-3' (FRAG 819) (SEQ. ID NO: 829)  
5'- G CGG CAT GGC GGG CA-3' (FRAG 820) (SEQ. ID NO: 830)  
5'- G CGG CAT GGC GGG C-3' (FRAG 821) (SEQ. ID NO: 831)  
5'- G CGG CAT GGC GGG -3' (FRAG 822) (SEQ. ID NO: 832)  
5'- G CGG CAT GGC GG-3' (FRAG 823) (SEQ. ID NO: 833)  
5'- G CGG CAT GGC G-3' (FRAG 824) (SEQ. ID NO: 834)  
5'- G CGG CAT GGC -3' (FRAG 825) (SEQ. ID NO: 835)  
5'- CGG CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 826) (SEQ. ID NO: 836)

5'- CGG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 827) (SEQ. ID NO: 837)  
5'- CGG CAT GGC GGG CAC AGG CTG G-3' (FRAG 828) (SEQ. ID NO: 838)  
5'- CGG CAT GGC GGG CAC AGG CTG -3' (FRAG 829) (SEQ. ID NO: 839)  
5'- CGG CAT GGC GGG CAC AGG CT-3' (FRAG 830) (SEQ. ID NO: 840)  
5'- CGG CAT GGC GGG CAC AGG C-3' (FRAG 831) (SEQ. ID NO: 841)  
5'- CGG CAT GGC GGG CAC AGG -3' (FRAG 832) (SEQ. ID NO: 842)  
5'- CGG CAT GGC GGG CAC AG-3' (FRAG 833) (SEQ. ID NO: 843)  
5'- CGG CAT GGC GGG CAC A-3' (FRAG 834) (SEQ. ID NO: 844)  
5'- CGG CAT GGC GGG CAC-3' (FRAG 835) (SEQ. ID NO: 845)  
5'- CGG CAT GGC GGG CA-3' (FRAG 836) (SEQ. ID NO: 846)  
5'- CGG CAT GGC GGG C-3' (FRAG 837) (SEQ. ID NO: 847)  
5'- CGG CAT GGC GGG -3' (FRAG 838) (SEQ. ID NO: 848)  
5'- CGG CAT GGC GG-3' (FRAG 839) (SEQ. ID NO: 849)  
5'- CGG CAT GGC G-3' (FRAG 840) (SEQ. ID NO: 850)  
5'- GG CAT GGC GGG CAC AGG C TG GGC-3' (FRAG 841) (SEQ. ID NO: 851)  
5'- GG CAT GGC GGG CAC AGG CTG GG-3' (FRAG 842) (SEQ. ID NO: 852)  
5'- GG CAT GGC GGG CAC AGG CTG G-3' (FRAG 843) (SEQ. ID NO: 853)  
5'- GG CAT GGC GGG CAC AGG CTG -3' (FRAG 844) (SEQ. ID NO: 854)  
5'- GG CAT GGC GGG CAC AGG CT-3' (FRAG 845) (SEQ. ID NO: 855)  
5'- GG CAT GGC GGG CAC AGG C-3' (FRAG 846) (SEQ. ID NO: 856)  
5'- GG CAT GGC GGG CAC AGG -3' (FRAG 847) (SEQ. ID NO: 857)  
5'- GG CAT GGC GGG CAC AG-3' (FRAG 848) (SEQ. ID NO: 858)  
5'- GG CAT GGC GGG CAC A-3' (FRAG 849) (SEQ. ID NO: 859)  
5'- GG CAT GGC GGG CAC-3' (FRAG 850) (SEQ. ID NO: 860)  
5'- GG CAT GGC GGG CA-3' (FRAG 851) (SEQ. ID NO: 861)  
5'- GG CAT GGC GGG C-3' (FRAG 852) (SEQ. ID NO: 862)  
5'- GG CAT GGC GGG -3' (FRAG 853) (SEQ. ID NO: 863)  
5'- GG CAT GGC GG-3' (FRAG 854) (SEQ. ID NO: 864)  
5'- G CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 855) (SEQ. ID NO: 865)  
5'- G CAT GGC GGG CAC AGG CTG GG-3' (FRAG 856) (SEQ. ID NO: 866)  
5'- G CAT GGC GGG CAC AGG CTG G-3' (FRAG 857) (SEQ. ID NO: 867)  
5'- G CAT GGC GGG CAC AGG CTG -3' (FRAG 858) (SEQ. ID NO: 868)  
5'- G CAT GGC GGG CAC AGG CT-3' (FRAG 859) (SEQ. ID NO: 869)  
5'- G CAT GGC GGG CAC AGG C-3' (FRAG 860) (SEQ. ID NO: 870)  
5'- G CAT GGC GGG CAC AGG -3' (FRAG 861) (SEQ. ID NO: 871)  
5'- G CAT GGC GGG CAC AG-3' (FRAG 862) (SEQ. ID NO: 872)  
5'- G CAT GGC GGG CAC A-3' (FRAG 863) (SEQ. ID NO: 873)  
5'- G CAT GGC GGG CAC-3' (FRAG 864) (SEQ. ID NO: 874)  
5'- G CAT GGC GGG CA-3' (FRAG 865) (SEQ. ID NO: 875)  
5'- G CAT GGC GGG C-3' (FRAG 866) (SEQ. ID NO: 876)  
5'- G CAT GGC GGG -3' (FRAG 867) (SEQ. ID NO: 877)  
5'- CAT GGC GGG CAC AGG CTG GGC-3' (FRAG 868) (SEQ. ID NO: 878)  
5'- CAT GGC GGG CAC AGG CTG GG-3' (FRAG 869) (SEQ. ID NO: 879)  
5'- CAT GGC GGG CAC AGG CTG G-3' (FRAG 870) (SEQ. ID NO: 880)  
5'- CAT GGC GGG CAC AGG CTG -3' (FRAG 871) (SEQ. ID NO: 881)  
5'- CAT GGC GGG CAC AGG CT-3' (FRAG 872) (SEQ. ID NO: 882)  
5'- CAT GGC GGG CAC AGG C-3' (FRAG 873) (SEQ. ID NO: 883)  
5'- CAT GGC GGG CAC AGG -3' (FRAG 874) (SEQ. ID NO: 884)  
5'- CAT GGC GGG CAC AG-3' (FRAG 875) (SEQ. ID NO: 885)  
5'- CAT GGC GGG CAC A-3' (FRAG 876) (SEQ. ID NO: 886)  
5'- CAT GGC GGG CAC-3' (FRAG 877) (SEQ. ID NO: 887)  
5'- CAT GGC GGG CA-3' (FRAG 878) (SEQ. ID NO: 888)  
5'- CAT GGC GGG C-3' (FRAG 879) (SEQ. ID NO: 889)  
5'- AT GGC GGG CAC AGG CTG GGC-3' (FRAG 880) (SEQ. ID NO: 890)  
5'- AT GGC GGG CAC AGG CTG GG-3' (FRAG 881) (SEQ. ID NO: 891)  
5'- AT GGC GGG CAC AGG CTG G-3' (FRAG 882) (SEQ. ID NO: 892)  
5'- AT GGC GGG CAC AGG CTG -3' (FRAG 883) (SEQ. ID NO: 893)  
5'- AT GGC GGG CAC AGG CT-3' (FRAG 884) (SEQ. ID NO: 894)  
5'- AT GGC GGG CAC AGG C-3' (FRAG 885) (SEQ. ID NO: 895)  
5'- AT GGC GGG CAC AGG -3' (FRAG 886) (SEQ. ID NO: 896)  
5'- AT GGC GGG CAC AG-3' (FRAG 887) (SEQ. ID NO: 897)  
5'- AT GGC GGG CAC A-3' (FRAG 888) (SEQ. ID NO: 898)  
5'- AT GGC GGG CAC-3' (FRAG 889) (SEQ. ID NO: 899)  
5'- AT GGC GGG CA-3' (FRAG 890) (SEQ. ID NO: 900)  
5'- T GGC GGG CAC AGG CTG GGC-3' (FRAG 891) (SEQ. ID NO: 901)  
5'- T GGC GGG CAC AGG CTG GG-3' (FRAG 892) (SEQ. ID NO: 902)  
5'- T GGC GGG CAC AGG CTG G-3' (FRAG 893) (SEQ. ID NO: 903)  
5'- T GGC GGG CAC AGG CTG -3' (FRAG 894) (SEQ. ID NO: 904)  
5'- T GGC GGG CAC AGG CT-3' (FRAG 895) (SEQ. ID NO: 905)

EPI-109

100

5'- T GGC GGG CAC AGG C-3' (FRAG 896) (SEQ. ID NO: 906)  
 5'- T GGC GGG CAC AGG -3' (FRAG 897) (SEQ. ID NO: 907)  
 5'- T GGC GGG CAC AG-3' (FRAG 898) (SEQ. ID NO: 908)  
 5'- T GGC GGG CAC A-3' (FRAG 899) (SEQ. ID NO: 909)  
 5'- T GGC GGG CAC-3' (FRAG 900) (SEQ. ID NO: 910)  
 5'- GGC GGG CAC AGG CTG GGC-3' (FRAG 901) (SEQ. ID NO: 911)  
 5'- GGC GGG CAC AGG CTG GG-3' (FRAG 902) (SEQ. ID NO: 912)  
 5'- GGC GGG CAC AGG CTG G-3' (FRAG 903) (SEQ. ID NO: 913)  
 5'- GGC GGG CAC AGG CTG -3' (FRAG 904) (SEQ. ID NO: 914)  
 5'- GGC GGG CAC AGG CT-3' (FRAG 905) (SEQ. ID NO: 915)  
 5'- GGC GGG CAC AGG C-3' (FRAG 906) (SEQ. ID NO: 916)  
 5'- GGC GGG CAC AGG -3' (FRAG 907) (SEQ. ID NO: 917)  
 5'- GGC GGG CAC AG-3' (FRAG 908) (SEQ. ID NO: 918)  
 5'- GGC GGG CAC A-3' (FRAG 909) (SEQ. ID NO: 919)  
 5'- GC GGG CAC AGG CTG GGC-3' (FRAG 910) (SEQ. ID NO: 920)  
 5'- GC GGG CAC AGG CTG GG-3' (FRAG 911) (SEQ. ID NO: 921)  
 5'- GC GGG CAC AGG CTG G-3' (FRAG 912) (SEQ. ID NO: 922)  
 5'- GC GGG CAC AGG CTG -3' (FRAG 913) (SEQ. ID NO: 923)  
 5'- GC GGG CAC AGG CT-3' (FRAG 914) (SEQ. ID NO: 924)  
 5'- GC GGG CAC AGG C-3' (FRAG 915) (SEQ. ID NO: 925)  
 5'- GC GGG CAC AGG -3' (FRAG 916) (SEQ. ID NO: 926)  
 5'- GC GGG CAC AG-3' (FRAG 917) (SEQ. ID NO: 927)  
 5'- C GGG CAC AGG CTG GGC-3' (FRAG 918) (SEQ. ID NO: 928)  
 5'- GGG CAC AGG CTG GG-3' (FRAG 919) (SEQ. ID NO: 929)  
 5'- C GGG CAC AGG CTG G-3' (FRAG 920) (SEQ. ID NO: 930)  
 5'- C GGG CAC AGG CTG -3' (FRAG 921) (SEQ. ID NO: 931)  
 5'- C GGG CAC AGG CT-3' (FRAG 922) (SEQ. ID NO: 932)  
 5'- C GGG CAC AGG C-3' (FRAG 923) (SEQ. ID NO: 933)  
 5'- C GGG CAC AGG -3' (FRAG 924) (SEQ. ID NO: 934)  
 5'- GGG CAC AGG CTG GGC-3' (FRAG 925) (SEQ. ID NO: 935)  
 5'- GGG CAC AGG CTG GG-3' (FRAG 926) (SEQ. ID NO: 936)  
 5'- GGG CAC AGG CTG G-3' (FRAG 927) (SEQ. ID NO: 937)  
 5'- GGG CAC AGG CTG -3' (FRAG 928) (SEQ. ID NO: 938)  
 5'- GGG CAC AGG CT-3' (FRAG 929) (SEQ. ID NO: 939)  
 5'- GGG CAC AGG C-3' (FRAG 930) (SEQ. ID NO: 940)  
 5'- GG CAC AGG CTG GGC-3' (FRAG 931) (SEQ. ID NO: 941)  
 5'- GG CAC AGG CTG GG-3' (FRAG 932) (SEQ. ID NO: 942)  
 5'- GG CAC AGG CTG G-3' (FRAG 933) (SEQ. ID NO: 943)  
 5'- GG CAC AGG CTG -3' (FRAG 934) (SEQ. ID NO: 944)  
 5'- GG CAC AGG CT-3' (FRAG 935) (SEQ. ID NO: 945)  
 5'- G CAC AGG CTG GGC-3' (FRAG 936) (SEQ. ID NO: 946)  
 5'- G CAC AGG CTG GG-3' (FRAG 937) (SEQ. ID NO: 947)  
 5'- G CAC AGG CTG G-3' (FRAG 938) (SEQ. ID NO: 948)  
 5'- G CAC AGG CTG -3' (FRAG 939) (SEQ. ID NO: 949)  
 5'- CAC AGG CTG GGC-3' (FRAG 940) (SEQ. ID NO: 950)  
 5'- CAC AGG CTG GG-3' (FRAG 941) (SEQ. ID NO: 951)  
 5'- CAC AGG CTG G-3' (FRAG 942) (SEQ. ID NO: 952)  
 5'- AC AGG CTG GGC-3' (FRAG 943) (SEQ. ID NO: 953)  
 5'- AC AGG CTG GG-3' (FRAG 944) (SEQ. ID NO: 954)  
 5'- C AGG CTG GGC-3' (FRAG 945) (SEQ. ID NO: 955)  
 5'- TTT TCC TTC CTT TGT CTC TCT TC (FRAG 946) (SEQ. ID NO: 956)  
 5'- GCT CCC GGC TGC CTG (FRAG 947) (SEQ. ID NO: 957)  
 5'- CTC GGC CGT GCG GCT CTG TCG CTC CCG GT (FRAG 948) (SEQ. ID NO: 958)  
 5'- CCG CCG CCC TCC GGG GGG TC (FRAG 949) (SEQ. ID NO: 959)  
 5'- TGC TGC CGT TGG CTG CCC (FRAG 950) (SEQ. ID NO: 960)  
 5'- CTT CTG CGG GTC GCC GG (FRAG 951) (SEQ. ID NO: 961)  
 5'- TGC TGG GCT TGT GGC (FRAG 952) (SEQ. ID NO: 962)  
 5'- GGC CTC TCT TCT GGG (FRAG 953) (SEQ. ID NO: 963)  
 5'- CCT GGT CCC TCC GT (FRAG 954) (SEQ. ID NO: 964)  
 5'- GGT GGC TCC TCT GC (FRAG 955) (SEQ. ID NO: 965)  
 5'- GCT TGG TCC TGG GGC TGC (FRAG 956) (SEQ. ID NO: 966)  
 5'- TGC TCT CCT CTC CTT (FRAG 957) (SEQ. ID NO: 967)

#### Human Adenosine A2a Receptor Nucleic Acid and Antisense Oligonucleotide Fragments

5'-TGC TTT TCT TTT CTG GGC CTC TGT GGT CTG TTT TTT TCT G GCC CTG CTG GGG CGC TCT CC GCC GCC CGC CTG  
 GCT CCC GGB GCC CBT GBT GGG CBT GCC GTG GTT CTT GCC CTC CTT TGG CTG CCG TGC CCG CTC CCC GGC CTC CTG  
 GCG GGT GGC CGT TG GGC CCG TGT TCC CCT GGG -GCC TGG GGC TCC CTT CTC TC GCC CTT CTT GCT GGG CCT C TGC  
 TGC TGC TGG TGC TGT GGC CCC C GTA CAC CGA GGA GCC CAT GAT GGG CAT GCC ACA GAC GAC AGG C GTB CBC  
 CGB GGB GCC CBT GBT GGG CBT GCC BCB GBC GBC BGG C-3' (FRAG. NO. 1665) (SEQ. ID NO: 1678)  
 5'-CTG GGC CTC-3' (FRAG 1666) (SEQ. ID NO: 1679)

5'-GCC GCC CGC CTG-3' (FRAG 1667) (SEQ. ID NO: 1680)  
 5'-GC CCG CTC CCC GGC-3' (FRAG 1668) (SEQ. ID NO: 1681)  
 5'-CBCCGBGGBGCCC-3' (FRAG 1669) (SEQ. ID NO: 1682)  
 5'-TGC TTT TCT TTT CTG GGC CTC-3' (FRAG 958) (SEQ. ID NO: 968)  
 5'-TGT GGT CTG TTT TTT TCT G-3' (FRAG 959) (SEQ. ID NO: 969)  
 5'-GCC CTG CTG GGG CGC TCT CC-3' (FRAG 960) (SEQ. ID NO: 970)  
 5'-GCC GCC CGC CTG GCT CCC-3' (FRAG 961) (SEQ. ID NO: 971)  
 5'-GGB GCC CBT GBT GGG CBT GCC-3' (FRAG 962) (SEQ. ID NO: 972)  
 5'-GTG GTT CTT GCC CTC CTT TGG CTG-3' (FRAG 963) (SEQ. ID NO: 973)  
 5'-CCG TGC CCG CTC CCC GGC-3' (FRAG 964) (SEQ. ID NO: 974)  
 5'-CTC CTG GCG GGT GGC CGT TG-3' (FRAG 965) (SEQ. ID NO: 975)  
 5'-GGC CCG TGT TCC CCT GGG-3' (FRAG 966) (SEQ. ID NO: 976)  
 5'-GCC TGG GGC TCC CTT CTC TC-3' (FRAG 967) (SEQ. ID NO: 977)  
 5'-GCC CTT CTT GCT GGG CCT C-3' (FRAG 968) (SEQ. ID NO: 978)  
 5'-TGC TGC TGC TGG TGC TGT GGC CCC C-3' (FRAG 969) (SEQ. ID NO: 979)  
 5'-GTACACCGAGGAGCCCCATGATGGGCATGCCACAGACGACAGGC-3' (FRAG 970) (SEQ. ID NO: 980)  
 5'-GTBCBCCBGGBGCCCBTGBTGGGCBTGCCBCBGBCBGCGGC-3' (FRAG 971) (SEQ. ID NO: 981)

### **Human Adenosine A2b Receptor Nucleic Acid and Antisense Oligonucleotide Fragments**

5'-GGC GCC GTG CCG CGT CTT GGT GGC GGC GG GTT CGC GCC CGC GCG GGG CCC CTC CGG TCC GTT CGC GCC CGC  
 GCG GGG CCC CTC CGG TCC CGG GTC GGG GCC CCC CGC GGC C GCC TCG GGG CTG GGG CGC TGG TGG CCG GG CCG  
 CGC CTC CGC CTG CCG CTT CTG GCT GGG CCC CGG GCG CCC CCT CCC CTC TTG CTC GGG TCC CCG TG ACA GCG CGT  
 CCT GTG TCT CCA GCA GCA TGG CCG GGC CAG CTG GGC CCC BCB GCG CGT CCT GTG TCT CCB GCB GCB TGG CCG  
 GGC CBG CTG GGC CCC CCCAGCCCCG AGGCTCAGAA GCGGCAGGCG GAGGCGCGGT CCGGGCGCTA TGGCCATGCC  
 CGGCGGGTCT CACGCGGCTG CCCCTCGCCC GCGCGCGCTT CGGTAGGGGG CGCCCGGGGC CCAGCTGGCC CGGCCATGCT  
 GCTGGAGACA CAGGACGCGC TGTACGTGGC GCTGGAGCTG GTCATCGCCG CGCTTTCGGT GCGGGGCAAC GTGCTGGTGT  
 GCGCCGCGGT GGGCACGGCG AACACTCTGC AGACGCGCCAC CAACTACTTC CTGGTGTCCC TGGCTGCGGC CGACGTGGCC  
 GTGGGGTCT TCGCCATCCC CTTTGCCATC ACCATCAGCC TGGGCTTCTG CACTGACTTC TACGGCTGCC TCTTCCTCGC  
 CTGCTTCGTG CTGGTGCTCA CGCAGAGCTC CATCTTCAGC CTCTGGCCG TGGCAGTCGA CAGATACTG GCCATCTGTG  
 TCCCGCTCAG GTATAAAAGT TTGGTCACGG GACCCCGAGC AAGAGGGGTC ATTGCTGTCC TCTGGGTCTT TGCCTTTGGC  
 ATCGGATTGA CTCCATTCTT GGGGTGGAAC AGTAAAGACA GTGCCACCAA CAACTGCACA GAACCTGGG ATGGAACCAC  
 GAATGAAAGC TGCTGCCTTG TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT GGTATATTTC AATTTCTTTG  
 GGTGTGTTCT GCGCCCACTG CTTATAATGC TGGTGATCTA CATTAAAGATC TTCCTGGTGG CCTGCAGGCA GCTTCAGCGC  
 ACTGAGCTGA TGGACCACTC GAGGACCACC CTCCAGCGGG AGATCCATGC AGCCAAGTCA CTGCCATGA TTGTGGGGAT  
 TTTTGCCCTG TGCTGGTTAC CTGTGCATGC TGTTAACTGT GTCACCTTT TCCAGCCAGC TCAGGGTAAA AATAAGCCCA  
 AGTGGGCAAT GAATATGGCC ATTCTTCTGT CACATGCCAA TTCAGTTGTC AATCCCATTT TCTATGCTTA CCGGAACCGA  
 GACTTCCGCT ACACCTTTCA CAAAATTATC TCCAGGTATC TTCTCTGCCA AGCAGATGTC AAGAGTGGGA ATGGTCAGGC  
 TGGGGTACAG CCGTCTCTCG GTGTGGGCTT ATGATCTAGG CTCTCGCTC TTCCAGGAGA AGATACAAAT CCACAAGAAA  
 CAAAGAGGAC ACGGCTGGTT TTCATTGTGA AAGATAGCTA CACCTACAAA GGAAATGGAC TGCCTCTCTT GAGCACTTCC  
 CTGGAGCTAC CACGTATCTA GCTAATATGT ATGTGTCACT AGTAGACCA AGGATTGACA AATATATTTA TGATCTATTC  
 AGCTGCTTTT ACTGTGTGGA TTATGCCAAC AGCTTGAATG GATTCTAACA GACTCTTTTG TTTTAAAAAG TCTGCCTTGT  
 TTATGGTGGA AAATACTGA AACTATTTTA CTGTGAAACA GTGTGAACTA TTATAATGCA AATACTTTT AACTTAGAGG  
 CAATGGAAAA ATAAAAGTTG ACTGTACTAA AAATGTATAC TTGTTGCCAG GAAGGTGACC TCAAAAATTA AAAGTATAAT  
 TATTCGGCCG GGCATGGTGG CTCACACCTG TAATTCCAGC ACTTTGGGAG GCCAAGGCAG GCGGATCAG AGGTACAGGAG  
 TTCAAAACCA GCCTGTCCAA TATAGTG GGGCAATTG TTAGTTATCC GCCGCCACCA AGACGCGGCA CGGCGCCTGG  
 ACCGGAGGGG CCGCGCGCG GCGGCAACTT TGGGCTCGGG CGAGTGGGTG GTGCTCCGCC CAGCCGAGA CGGCGGGGCG  
 CGCGGGCCAA TGGGTGCCGC CTCTTGGCCG CGGGGGGCCC GACCCGTGG GTCCCGGCCA CCAGCGCCCC AGCCCCGAGG  
 CTCAGAAGCG GCAGGCGGAG GCGCGGTCCG GCGGCTATGG CCATGCCCGG CGGGTCTCAC GCGGCTGCCC CTCGCCCGGC  
 GCGCCTTCGG TAGGGGGGCG CCGGGGCCCA GCTGGCCCGG CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT  
 GGAGCTGGTC ATCGCCGCGC TTTCGGTGGC GGGCAACGTG CTGGTGTGCG CCGCGGTGGG CACGGCGAAC ACTCTGCAGA  
 CGCCACCAA CTACTTCTG GTGTCCCTGG CTGCGGCCGA CGTGCCCGTG GGGCTCTTCG CCATCCCTT TGCCATCACC  
 ATCAGCCTGG GCTTCTGCAC TGACTTCTAC GGCTGCCTCT TCCTCGCCTG CTTCGTGCTG GTGCTCACGC AGAGCTCCAT  
 CTTACGCTT CTGGCCGTGG CAGTCGACAG ATACCTGGCC ATCTGTGTCC CGCTCAGGTA TAAAAGTTTG GTCACGGGGA  
 CCCGAGCAAG AGGGGTCATT GCTGTCTCTT GGGTCTTGC CTTTGGCATC GGATTGACTC CATTCTGGG GTGGAACAGT  
 AAAGACAGTG CCACCAACAA CTGCACAGAA CCTGGGATG GAACCAAGAA TGAAAGCTGC TGCCTTGTGA ATGTCTCTT  
 TGAGAATGTG GTCCCCATGA GCTACATGGT ATATTTCAAT TTCTTTGGGT GTGTCTGCC CCCACTGCTT ATAATGCTGG  
 TGATCTACAT TAAGATCTTC CTGGTGGCCT GCAGGCGACT TCAGCGCACT GAGCTGATGG ACCACTCGAG GACCACCCTC  
 CAGCGGGAGA TCCATGCAGC CAAGTCACTG GCCATGATTG TGGGGATTTT TGCCCTGTGC TGGTTACCTG TGCATGCTGT  
 TAACGTGTGC ACTCTTTTCC AGCCAGCTCA GGGTAAAAAT AAGCCCAAGT GGGCAATGAA TATGGCCATT CTTCTGTAC  
 ATGCCAATTC AGTTGTCAAT CCCATTGTCT ATGCTTACCG GAACCGAGAC TTCCGCTACA CTTTTCACAA AATTATCTCC  
 AGGTATCTTC TCTGCCAAGC AGATGTCAAG AGTGGGAATG GTCAGGCTGG GGTACAGCCT GCTCTCGGTG TGGGCCTATG  
 ATCTAGGCTC TCGCTCTTC CAGGAGAAGA TACAAATCCA CAAGAAACAA AGAGGACACG GCTGGTTTTT ATTGTGAAAG  
 ATAGCTACAC CTCACAAAGA AATGGACTGC CTCTCTTGAG CACTTCCCTG GAGCTACCAC GTATCTAGCT AATATGTATG  
 TGTCAGTAGT AGGCTCCAAG GATTGACAAA TATATTATG ATCTATTAC CTGCTTTTAC TGTGTGGATT ATGCCAACAG  
 CTTGAATGGA TTCTAACAGA CTCTTTTGT TTTAAAAGTC TGCCTTGTAT ATGGTGAAA ATTACTGAAA CTATTTTACT  
 GTGAAACAGT GTGAATATT ATAATGCAAA TACTTTTAA CTTAGAGGCA ATGGAAAAAT AAAAGTTGAC TGTAATAAAA

ATG CCCAGCCCCG AGGCTCAGAA GCGGCAGGCG GAGGCGCGGT CCGGGCGCTA TGGCCATGCC CGGCGGGTCT  
CACGCGGCTG CCCCTCGCCC GCGCGCCTT CGGTAGGGGG CGCCCGGGGC CCAGCTGGCC CGGCCATGCT GCTGGAGACA  
CAGGACGCGC TGTACGTGGC GCTGGAGCTG GTCATCGCG CGTTTCGGT GGC GGCGCAAC GTGCTGGTGT GCGCCGCGGT  
GGGCACGGCG AACACTCTGC AGACGCCAC CAACTACTTC CTGGTGTCCC TGGCTGCGGC CGACGTGGCC GTGGGGCTCT  
TCGCCATCCC CTTTGCCATC ACCATCAGCC TGGGCTTCTG CACTGACTTC TACGGGTGCC TCTTCTCGC CTGCTTCGTG  
CTGGTGCTCA CGCAGAGCTC CATCTTCAGC CTCTGGGCC TGGCAGTCGA CAGATACCTG GCCATCTGTG TCCCGCTCAG  
GTATAAAAGT TTGGTCACGG GGACCCGAGC AAGAGGGGTC ATTGCTGTCC TCTGGGTCTT TGCTTTGGC ATCGGATTGA  
CTCCATTCTT GGGGTGGAAC AGTAAAGACA GTGCCACAA CAACTGCACA GAACCCTGGG ATGGAACCAC GAATGAAAGC  
TGCTGCCTTG TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT GGTATATTTT AATTTCTTTG GGTGTGTTCT  
GCCCCACTG CTTATAATGC TGGTGATCTA CATTAAAGATC TTCCTGGTGG CCTGCAGGCA GCTTCAGCGC ACTGAGCTGA  
TGACCACCTC GAGGACCACC CTCCAGCGGG AGATCCATGC AGCCAAGTCA CTGGCCATGA TTGTGGGGAT TTTTGCCTG  
TGCTGGTTAC CTGTGCATGC TGTTAACTGT GTCATCTTT TCCAGCCAGC TCAGGGTAAA AATAAGCCCA AGTGGGCAAT  
GAATATGGCC ATTCTTCTGT CACATGCCAA TTCAGTTGTC AATCCCATTG TCTATGCTTA CCGGAACCGA GACTTCCGCT  
ACACTTTTCA CAAAATTATC TCCAGGTATC TTCTCTGCC AGCAGATGTC AAGAGTGGGA ATGGTCAGG TGGGGTACAG  
CCTGTCTCG GTGTGGGCTT ATGATCTAGG CTCTCGCTC TTCCAGGAGA AGATACAAA CCACAAGAAA CAAAGAGGAC  
ACGGCTGGTT TTCATTGTGA AAGATAGCTA CACCTACAA GAAATGGAC TGCCTCTTT GAGCACTTC CTGGAGCTAC  
CACGTATCTA GCTAATATGT ATGTGTCAGT AGTAGCACCA AGGATTGACA AATATATTTA TGATCTATTC AGCTGCTTTT  
ACTGTGTGGA TTATGCCAAC AGCTTGAATG GATTCTAACA GACTCTTTT TTTTAAAAAG TCTGCCTTGT TTATGGTGA  
AAATTACTGA AACTATTTTA CTGTGAAACA GTGTGAACTA TTATAATGCA AATACTTTTT AACTTAGAGG CAATGGAAAA  
ATAAAAGTTG ACTGTACTAA AAATGTATAC TTGTGCCAG GAAGGTGACC TCAAAAATTA AAAGTATAAT TATTCGGCCG  
GGCATGGTGG CTCACACCTG TAATCCAGC ACTTTGGGAG GCCAAGGCAG GCGGATCAG AGGTCAGGAG TTCAAAACCA  
GCCTGTCCA TATAGTG GGGCAATTG TTAGTTATCC GCGGCCACCA AGACGCGGCA CGGCGCCTGG ACCGGAGGGG  
CCCCGCGCG GCGCGAACTT TGGGCTCGGG CGAGTGGGTG GTGCTCCGCC CAGCCGAGA CGGGCGGGCG CGCGGCCAA  
TGGGTGCCGC CTCTGGCCG CGGGGGGCCG CGACCCGTGG GTCCCGGCCA CCAGCGCCCC AGCCCGAGG CTCAGAAGCG  
GCAGGCGGAG GCGCGGTCCG GCGCTATGG CCATGCCCGG CGGGTCTCAC GCGGCTGCC CTCGCCCGG GCGCCTTCGG  
TAGGGGGCGC CCGGGGCCCA GCTGGCCCG CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT GGAGCTGGTC  
ATCGCCGCGC TTTGGGTGGC GGGCAACGTG CTGGTGTGCG CCGCGGTGGG CACGGCGAAC ACTCTGCAGA CGCCACCAA  
CTACTTCTG GTGTCCCTGG CTGCGGCCGA CGTGCCCGTG GGGCTCTTCG CCATCCCTT TGCCATCACC ATCAGCCTGG  
GCTTCTGCAC TGACTTCTAC GGCTGCCTCT TCCTCGCTG CTTCGTGCTG GTGCTCAGC AGAGCTCCAT CTTAGCCTT  
CTGGCCGTGG CAGTCGACAG ATACCTGGCC ATCTGTGTC CGCTCAGGTA TAAAAGTTTG GTCACGGGGA CCCGAGCAAG  
AGGGTCATT GCTGTCTCT GGGTCTTGC CTTGGCATC GTTGTACTC CATTCTGGG GTGGAACAGT AAAGACAGT  
CCACCAACAA CTGCACAGAA CCTGGGATG GAACCAAGAA TGAAGACTGC TGCCTTGTGA AGTGTCTCT TGAGAATGTG  
GTCCCATGA GCTACATGGT ATATTTCAAT TTCTTTGGGT GTGTTCTGCC CCCACTGCTT ATAATGCTGG TGATCTACAT  
TAAGATCTTC CTGGTGGCCT GCAGGCAGCT TCAGCGCACT GAGCTGATGG ACCACTCGAG GACCACCCTC CAGCGGGAGA  
TCCATGCAGC CAAGTCACTG GCCATGATTG TGGGGATTTT TGCCCTGTGC TGGTTACCTG TGATGCTGT TAACTGTGTC  
ACTCTTTTCC AGCCAGCTCA GGGTAAAAAT AAGCCCAAGT GGGCAATGAA TATGGCCATT CTTCTGTAC ATGCCAATTC  
AGTTGTCAAT CCCATTGTCT ATGCTTACCG GAACCGAGAC TTCCGCTACA CTTTTACAA AATTATCTCC AGGTATCTTC  
TCTGCCAAGC AGATGTCAAG AGTGGGAATG GTCAGGCTGG GGTACAGCCT GCTCTCGGTG TGGGCTATG ATCTAGGCTC  
TCGCTCTTC CAGGAGAAGA TACAAATCCA CAAGAAACAA AGAGGACACG GCTGGTTTTT ATTGTGAAAG ATAGCTACAC  
CTCACAAGGA AATGGACTGC CTCTCTTGA CACTTCCCTG GAGCTACCAC GTATCTAGCT AATATGTATG GTGCTAGT  
AGGCTCCAAG GATTGACAAA TATATTTATG ATCTATTCAG CTGCTTTTAC TGTGTGGATT ATGCCAACAG CTTGAATGGA  
TTCTAACAGA CTCTTTTGT TTTAAAAGTC TGCTTGTIT ATGGTGAAA ATTACTGAAA CTATTTTACT GTGAAACAGT  
GTGAACATT ATAATGCAAA TACTTTTTAA CTTAGAGGCA ATGGAAAAAT AAAAGTTGAC TGACTAAAA ATG -3' (FRAG.  
NO: 1670) (SEQ. ID NO:1683)

5'- GGGCAATTG TTAGTTATCC GCGGCCACCA AGACGCGGCA CGGCGCCTGG ACCGGAGGGG CCGCGCGCGG  
GCGGCAACTT TGGGCTCGGG CGAGTGGGTG GTGCTCCGCC CAGCCGAGA CGGGCGGGCG CGCGGGCCAA TGGGTGCCG  
CTCTTGGCG CCGGGGGGCC CGACCCGTGG GTCCCGGCCA CCAGCGCCCC AGCCCGAGG CTCAGAAGCG GACGGCGGAG  
GCGCGGTCCG GCGGCTATGG CCATGCCCGG CGGGTCTCAC GCGGCTGCC CTCGCCCGG GCGCCTTCGG TAGGGGGCGC  
CCGGGGCCCA GCTGGCCCG CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT GGAGCTGGTC ATCGCGCGC  
TTTGGTGGC GGGCAACGTG CTGGTGTGCG CCGCGGTGGG CACGGCGAAC ACTCTGCAGA CGCCACCAA CTACTTCTG  
GTGTCCCTGG CTGCGGCCGA CGTGGCCGTG GGGCTCTTCG CCATCCCTT TGCCATCACC ATCAGCCTGG GCTTCTGCAC  
TGACTTCTAC GGCTGCCTCT TCCTCGCTG CTTCGTGCTG GTGCTCAGC AGAGCTCCAT CTTAGCCTT CTGGCCGTGG  
CAGTCGACAG ATACCTGGCC ATCTGTGTC CGCTCAGGTA TAAAAGTTTG GTCACGGGGA CCCGAGCAAG AGGGGTCAAT  
GCTGTCTCT GGGTCTTGC CTTTGGCATC GGATTGACTC CATTCTGGG GTGGAACAGT AAAGACAGT CCACCAACAA  
CTGCACAGAA CCTGGGATG GAACCAAGAA TGAAGACTGC TGCTTTGTA AGTGTCTCT TGAGAATGTG GTCCCATGA  
GCTACATGGT ATATTTCAAT TTCTTTGGGT GTGTTCTGCC CCCACTGCTT ATAATGCTGG TGATCTACAT TAAGATCTC  
CTGGTGGCCT GCAGGCAGCT TCAGCGCACT GAGCTGATGG ACCACTCGAG GACCACCCTC CAGCGGGAGA TCCATGCAGC  
CAAGTCACTG GCCATGATTG TGGGGATTTT TGCCCTGTGC TGGTTACCTG TGATGCTGT TAACTGTGTC ACTCTTTTCC  
AGCCAGCTCA GGGTAAAAAT AAGCCCAAGT GGGCAATGAA TATGGCCATT CTTCTGTAC ATGCCAATTC AGTTGTCAAT  
CCCATTGTCT ATGCTTACCG GAACCGAGAC TTCCGCTACA CTTTTACAA AATTATCTCC AGGTATCTTC TCTGCCAAGC  
AGATGTCAAG AGTGGGAATG GTCAGGCTGG GGTACAGCCT GCTCTCGGTG TGGGCTATG ATCTAGGCTC TCGCTCTTC  
CAGGAGAAGA TACAAATCCA CAAGAAACAA AGAGGACACG GCTGGTTTTT ATTGTGAAAG ATAGCTACAG CTCACAAGGA  
AATGGACTGC CTCTCTTGA CACTTCCCTG GAGCTACCAC GTATCTAGCT AATATGTATG TGTCAGTAGT AGGCTCAAG  
GATTGACAAA TATATTTATG ATCTATTCAG CTGCTTTTAC TGTGTGGATT ATGCCAACAG CTTGAATGGA  
CTCTTTTGT TTTAAAAGTC TGCTTGTIT ATGGTGAAA ATTACTGAAA CTATTTTACT GTGAAACAGT  
ATAATGCAAA TACTTTTTAA CTTAGAGGCA ATGGAAAAAT AAAAGTTGAC TGACTAAAA ATG -3' (FRAG. NO: ) (SEQ. ID

NO:2436

5'- CCCAGCCCCG AGGCTCAGAA GCGGCAGGCG GAGGCGCGGT CCGGGCGCTA TGGCCATGCC CGGCGGGTCT  
CAGCGGGCTG CCCTCGCCC GCGCGCCTT CGGTAGGGGG CGCCCGGGG CCAGCTGGCC CGGCCATGCT GCTGGAGACA  
CAGGACGCGC TGTACGTGGC GCTGGAGCTG GTCATCGCCG CGCTTCGGT GGCGGGCAAC GTGCTGGTGT GCGCCGCGGT  
GGGCACGGCG AACACTCTGC AGACGCCAC CAACTACTTC CTGGTGTCCC TGGCTGCGGC CGACGTGGCC GTGGGGCTCT  
TCGCCATCCC CTTTGCCATC ACCATCAGCC TGGGCTTCTG CACTGACTTC TACGGCTGCC TCTTCTCGC CTGCTTCGTG  
CTGGTGCTCA CGCAGAGCTC CATCTTCAGC CTCTGCGGC TGGCAGTCGA CAGATACCTG GCCATCTGTG TCCCGTCAAG  
GTATAAAAGT TTGGTCACGG GGACCCGAGC AAGAGGGGTC ATTGCTGTCC TCTGGGTCTT TGCCTTTGGC ATCGGATTGA  
CTCCATTCTT GGGGTGGAAC AGTAAAGACA GTGCCACCAA CAACTGCACA GAACCCTGGG ATGGAACCAC GAATGAAAGC  
TGCTGCCTTG TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT GGTATATTTC AATTTCTTTG GGTGTGTTCT  
GCCCCACTG CTTATAATGC TGGTGATCTA CATTAAAGATC TTCTGGTGG CCTGCAGGCA GCTTCAGCGC ACTGAGCTGA  
TGGACCACTC GAGGACCACC CTCCAGCGGG AGATCCATGC AGCCAAGTCA CTGGCCATGA TTGTGGGGAT TTTTGCCCTG  
TGCTGGTTAC CTGTGCATGC TGTTAACTGT GTCACTCTTT TCCAGCCAGC TCAGGGTAAA AATAAGCCCA AGTGGGCAAT  
GAATATGGCC ATTCTTCTGT CACATGCCAA TTCAGTTGTC AATCCCATTG TCTATGCTTA CCGGAACCGA GACTTCCGCT  
ACACTTTTCA CAAAATTATC TCCAGGTATC TTCTGTCCA AGCAGATGTC AAGAGTGGGA ATGGTCAGGC TGGGGTACAG  
CCTGCTCTCG GTGTGGGCTT ATGATCTAGG CTCTCGCCTC TTCAGGAGA AGATACAAAT CCACAAGAAA CAAAGAGGAC  
ACGGCTGGTT TTCATTGTGA AAGATAGCTA CACCTCACA GGAATGGAC TGCCTCTCTT GAGCACTTCC CTGGAGCTAC  
CACGTATCTA GCTAATATGT ATGTGTCAGT AGTAGCACA AGGATTGACA AATATATTTA TGATCTATTC AGCTGCTTTT  
ACTGTGTGGA TTATGCCAAC AGCTTGAATG GATTCTAACA GACTCTTTTG TTTTAAAG TCTGCCTTGT TTATGGTGGA  
AAATTACTGA AACTATTTTA CTGTGAAACA GTGTGAACTA TTATAATGCA AATACTTTTT AACTTAGAGG CAATGGAAAA  
ATAAAAGTTG ACTGTACTAA AAATGTATAC TTGTTGCCAG GAAGGTGACC TCAAAAATTA AAAGTATAAT TATTCGGCCG  
GGCATGGTGG CTCACACCTG TAATTCCAGC ACTTTGGGAG GCCAAGGCAG GCGGATCAG AGGTCAGGAG TTCAAAACCA  
GCCTGTCCAA TATAGT -3' (FRAG. NO: ) (SEQ. ID NO:2435)

5'- GGGCAATTG TAGTTATCC GCCGCCACA AGACGCGCA CCGCGCCTGG ACCGAGGGG CCCC GCGCGG  
GCGCGAATT TGGGCTCGGG CGAGTGGGTG GTGCTCCGCC CAGCCCGAGA CCGGCGGGCG CGCGGGCCAA TGGGTGCCGC  
CTCTTGGCCG CCGGGGGCCC CGACCCGTGG GTCCCGGCCA CCAGCGCCCC AGCCCGAGG CTCAGAAGCG GCAGGCGGAG  
GCGCGTCCG GCGCTATGG CCATGCCCGG CCGGTCTCAC GCGGCTGCC CTGCGCCGGC GCGCCTTCGG TAGGGGGCGC  
CCGGGGCCCA GCTGGCCCGG CCATGCTGCT GGAGACACAG GACGCGCTGT ACGTGGCGCT GGAGCTGGTC ATCGCCGCGC  
TTTCGGTGGC GGGCAACGTG CTGGTGTGCG CCGCGGTGG CACGGCGAAC ACTCTGCAGA CGCCACCAA CTACTCTCTG  
GTGTCCTTG CTGCGGCCGA CGTGGCCGTG GGGCTCTTCG CCATCCCCCT TGCCATCACC ATCAGCCTGG GCTTCTGCAC  
TGACTTCTAC GGCTGCCTCT TCCTCGCCTG CTTCGTGCTG GTGCTCACGC AGAGCTCCAT CTTAGCCTT ATGGCCGTGG  
CAGTCGACAG ATACCTGGCC ATCTGTGTC CGCTAGGTA TAAAGTTTG GTCACGGGA CCCGCAAG CTGGGCTCATT  
GCTGTCTCT GGGTCTTGC CTTTGGCATC GGATTGACTC CATTCTGGG GTGGAACAGT AAAGACAGTG CCACCAACAA  
CTGCACAGAA CCTGGGATG GAACCACGAA TGAAGAGTGC TGCCTGTGA AGTGTCTCT TGAGAATGTG GTCCCATGA  
GCTACATGGT ATATTTCAAT TTCTTGGGT GTGTTCTGCC CCCACTGCTT ATAATGCTGG TGATCTACAT TAAGATCTTC  
CTGGTGGCCT GCAGGCAGCT TCAGCGCACT GAGCTGATGG ACCACTCGAG GACCACCCTC CAGCGGGAGA TCCATGCAGC  
CAAGTCACTG GCCATGATTG TGGGGATTTT TGCCCTGTGC TGGTTACCTG TGCATGCTGT TAACTGTGTC ACTCTTTTCC  
AGCCAGCTCA GGGTAAAAAT AAGCCCAAGT GGGCAATGAA TATGGCCATT CTCTGTAC ATGCCAATTC AGTTGTCAAT  
CCCATTGTCT ATGCTTACCG GAACCGAGAC TTCCGTACA CTTTTCACAA AATTATCTCC AGGTATCTTC TCTGCCAAGC  
AGATGTCAAG AGTGGGAATG GTCAGGCTGG GGTACAGCCT GCTCTCGGTG TGGGCTATG ATCTAGCTTC TCGGCTTTC  
CAGGAGAAGA TACAAATCCA CAAGAAACAA AGAGACACG GCTGTTTTT ATTGTGAAAG ATAGCTACAC CTCACAAGGA  
AATGGACTGC CTCTTTGAG CACTTCCCTG GAGTACCAC GTATCTAGCT AATATGTATG TGTCAGTAGT AGGCTCCAAG  
GATTGACAAA TATATTTATG ATCTATTCAG CTGCTTTTAC TGTGTGGATT ATGCCAAGC CTTGAATGGA TTCTAACAGA  
CTCTTTTGT TTTAAAGTC TGCCTTGTG ATGGTGGAAA ATACTGAAA CTATTTTACT GTGAAACAGT GTGAACATT  
ATAATGCAAA TACTTTTAA CTTAGAGGCA ATGGAAAAAT AAAAGTTGAC TGTACTAAA ATG -3' (FRAG. NO: ) (SEQ. ID  
NO:2425)

5'-CCCAGCCCCG AGGCTCAGAA GCGGCAGGCG GAGGCGCGGT CCGGGCGCTA TGGCCATGCC CGGCGGGTCT  
CAGCGGGCTG CCCTCGCCC GCGCGCCTT CGGTAGGGGG CGCCCGGGG CCAGCTGGCC CGGCCATGCT GCTGGAGACA  
CAGGACGCGC TGTACGTGGC GCTGGAGCTG GTCATCGCCG CGCTTCGGT GGCGGGCAAC GTGCTGGTGT GCGCCGCGGT  
GGGCACGGCG AACACTCTGC AGACGCCAC CAACTACTTC CTGGTGTCCC TGGCTGCGGC CGACGTGGCC GTGGGGCTCT  
TCGCCATCCC CTTTGCCATC ACCATCAGCC TGGGCTTCTG CACTGACTTC TACGGCTGCC TCTTCTCGC CTGCTTCGTG  
CTGGTGCTCA CGCAGAGCTC CATCTTCAGC CTCTGCGGC TGGCAGTCGA CAGATACCTG GCCATCTGTG TCCCGTCAAG  
GTATAAAAGT TTGGTCACGG GGACCCGAGC AAGAGGGGTC ATTGCTGTCC TCTGGGTCTT TGCCTTTGGC ATCGGATTGA  
CTCCATTCTT GGGGTGGAAC AGTAAAGACA GTGCCACCAA CAACTGCACA GAACCCTGGG ATGGAACCAC GAATGAAAGC  
TGCTGCCTTG TGAAGTGTCT CTTTGAGAAT GTGGTCCCCA TGAGCTACAT GGTATATTTC AATTTCTTTG GGTGTGTTCT  
GCCCCACTG CTTATAATGC TGGTGATCTA CATTAAAGATC TTCTGGTGG CCTGCAGGCA GCTTCAGCGC ACTGAGCTGA  
TGGACCACTC GAGGACCACC CTCCAGCGGG AGATCAATGC AGCCAAGTCA CTGGCCATGA TTGTGGGGAT TTTTGCCCTG  
TGCTGGTTAC CTGTGCATGC TGTTAACTGT GTCACTCTTT TCCAGCCAGC TCAGGGTAAA AATAAGCCCA AGTGGGCAAT  
GAATATGGCC ATTCTTCTGT CACATGCCAA TTCAGTTGTC AATCCCATTG TCTATGCTTA CCGGAACCGA GACTTCCGCT  
ACACTTTTCA CAAAATTATC TCCAGGTATC TTCTGTCCA AGCAGATGTC AAGAGTGGGA ATGGTCAGGC TGGGGTACAG  
CCTGCTCTCG GTGTGGGCTT ATGATCTAGG CTCTCGCCTC TTCAGGAGA AGATACAAAT CCACAAGAAA CAAAGAGGAC  
ACGGCTGGTT TTCATTGTGA AAGATAGCTA CACCTCACA GGAATGGAC TGCCTCTCTT GAGCACTTCC CTGGAGCTAC  
CACGTATCTA GCTAATATGT ATGTGTCAGT AGTAGCACA AGGATTGACA AATATATTTA TGATCTATTC AGCTGCTTTT  
ACTGTGTGGA TTATGCCAAC AGCTTGAATG GATTCTAACA GACTCTTTTG TTTTAAAG TCTGCCTTGT TTATGGTGGA  
AAATTACTGA AACTATTTTA CTGTGAAACA GTGTGAACTA TTATAATGCA AATACTTTTT AACTTAGAGG CAATGGAAAA  
ATAAAAGTTG ACTGTACTAA AAATGTATAC TTGTTGCCAG GAAGGTGACC TCAAAAATTA AAAGTATAAT TATTCGGCCG



GGCATGGTGG CTCACACCTG TAATTCCAGC ACTTTGGGAG GCCAAGGCAG GCGGATCAGC AGGTCAGGAG TTCAAAACCA  
GCCTGTCCAA TATAGTG (FRAG. NO: ) (SEQ. ID NO: 2424)  
5'-GCGCGTCCTG-3' (FRAG. NO: 1671) (SEQ. ID NO: 1684)  
5'-GCT GGG CCC CGG-3' (FRAG. NO: 1672) (SEQ. ID NO: 1685)  
5'-CGG GTC GGG GCC CCC C-3' (FRAG. NO: 1673) (SEQ. ID NO: 1686)  
5'-CGC GCC CGC G-3' (FRAG. NO: 1674) (SEQ. ID NO: 1687)  
5'-GGC GCC GTG CCG CGT CTT GGT GGC GGC GG-3' (FRAG 972) (SEQ. ID NO: 982)  
5'-GTT CGC GCC CGC GCG GGG CCC CTC CGG TCC-3' (FRAG 973) (SEQ. ID NO: 983)  
5'-GTT CGC GCC CGC GCG GGG CCC CTC CGG TCC-3' (FRAG 974) (SEQ. ID NO: 984)  
5'-CGG GTC GGG GCC CCC CGC GGC C-3' (FRAG 975) (SEQ. ID NO: 985)  
5'-GCC TCG GGG CTG GGG CGC TGG TGG CCG GG-3' (FRAG 976) (SEQ. ID NO: 986)  
5'-CCG CGC CTC CGC CTG CCG CTT CTG-3' (FRAG 977) (SEQ. ID NO: 987)  
5'-GCT GGG CCC CGG GCG CCC CCT-3' (FRAG 978) (SEQ. ID NO: 988)  
5'-CCC CTC TTG CTC GGG TCC CCG TG-3' (FRAG 979) (SEQ. ID NO: 989)  
5'-ACAGCGCGTCTGTGTCTCCAGCAGCATGGCCGGGCCAGCTGGGCCCC-3' (FRAG 980) (SEQ. ID NO: 990)  
5'-BCBGCGCGTCTGTGTCTCCBGBGCBTGGCCGGGCCBGTGGGCCCC-3' (FRAG 981) (SEQ. ID NO: 991)

### Human Adenosine A3 Receptor Nucleic Acid and Antisense Oligonucleotide Fragments

5'-ACA GAG CAG TGC TGT TGT TGG GCA TCT TGC CTT CCC AGG G BCB GBG CB TGC TGT TGT TGG GCB TCT TGC CTT  
CCC BGG GCC CTT TTC TGG TGG GGT GGT GCT GTT GTT GGG CTT TCT TCT GTT CCC BCB GBG CBG TGC TGT TGT TGG  
GCB TCT TGC CTT CCC BGG GCC CTT TTC TGG TGG GGT GGT GCT GTT GTT GGG C TTT CTT CTG TTC CC  
GAATTCACAG ATGGGCGAGAG GTGGCTGGGC TGGTGACCCT AAGTGTGTCT CCTGCCTTTA TTCTCTCTAG TGGGTTATTC  
TTTCATGTGG TATCTTGCTT ACAGCATGCT GTGTTTGGAC ACAAACCCCT TTCCTTGGTT TCTCTGACCC AGCTGAGATG  
GACTGATTCC AAAAGAATC ACCTATGTAC TGGGGTAGGG GAGGGAGGGT TTTTTCAGT ATTTAACTAA GGTTCAAAGA  
GTGCTATATA GTGAGAAAGG CTCTTTTTT TTTTTTTTT TTTTTTGGCA GAGTGTGCTC TCCTAGAAAT TTCTCTTGGT  
AACTTCCTTC TCTGAAGCAC AGATAAAGAA AACAATTACA GTAGAAACAT TTATGAGGGA CACATTGGAG GCCGATGAAG  
CTTTTCAAGT TCCAGCAGTG CAGGGATGTG GGCAGAACTG ACATTGGAAA ATACTAGAAT GATGGAAAT CAGTTGGAGA  
GGACTGCCCT TTTTAATGTC TGGGGAGTCT GCTCAGGAG AAATGACAAG TCTGGCGGG ACAAGTATGG GATTGGTAA  
GACTTGGATC AACTTGGGAT ACAGGGTGGG GGTGGGAGT GGAATCAATG AATGATGCCA GAGCAGATCA ACTAACAAGA  
GGACCTGAT GAGCCCCAGG CAGAGGCGTC TCCCTATGC CCCACTCTGA AGTGTTTGT AGTAAACACC AGAACGCCAT  
TGTTGTTACT GCTGAATTT ATTTTGGGCT GTACATATT AGATGCTTAA GGTAATAATG ATAAAGCCCT CAAGCCACTG  
TGTGGGTTT GGTCCAAGTG TTCTTCTTG CTGCCTCTT AACACGCCTG GTTAAATAA TCCTTTTGA TGGTGCTGAG  
AAGCACTGA ACCAAGTGGG TCCCAAATA ACAATGGCGT GCAAGTGTCT GGTTCACAGA AGTTGGTGAC TAGGTAAGCA  
GCTTCAGGA GAGGGGGCTG ATCCAGAC AGTCGCTGT TCCTCGGGG ATGGGGCTGA GGCTGGGGA ATGTGGGCAG  
GAGGATATGC CATTGATTC TGTTGCACAC GTTCTTTTCC CTCTTTCTG TATGTCTGCTA TTCTGCTGT  
CCTCACATAG GTTGGACATT GGCCGGCTGC CAGCATAAGT GCCAGTGTGA TTTTGCTAGG TGTGAGCTGA GAAAGAGAGG  
TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTGCCTT TCTGAGCAGG GAATCTTGC TTATCCCTTT  
GACCAAGGAT CTTTGCTGCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT  
AGTTCTGGCT AAGGTTAGGA GGCTGCCACC AAAGTCTCTT TTTTGTCTT CTGCTTCTCC CGTTGCCTC CTTATCATGA  
GATCTTTTGG CTAAGCTGGC AGAAAGATTG CATAGTCAGT GCTTCAGCT CTGCTCCAC CTGATCCTGC ACTGCTCTT  
GGTCCCTGAA GAGGGGCTG CTGATACCCA ATCTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCTC TTCTGCTCTT  
TCCATCTTT TGCTGAGAGT TCTGAGCTCT GTACTCTCT TGGCCCATC TCACTTCTG AACACCCCTT GAAGAGGGTT  
GCTTATCTTG ATGGAATCA AAAAGCCAAA AAGCTGCAGG CAGAGGCGTT GAGGACATCT GTTGGGGAA CTAAGAGCAG  
CAGCACTTC AGATTAGTC CATATAGAGC TGTCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGCT  
GGAAGTGACC CACCTGTGAT GAGCCCTTTC TAAGGAGAAG GGTTCCTAAG AGATCACCCC ACCAGAAAAG GGTAGGAATG  
AGCAAGTTGG GAATTTTAGA CTGTCACTGC ACATGGACCT CTGGGAAGAC GTCTGGCGAG AGCTAGGCCC ACTGGCCCTA  
CAGACGGATC TTGCTGGCTC ACCTGTCCCT GTGGAGGTTT CCCTGGGAAG GCAAGATGCC CAACAACAGC ACTGCTCTGT  
CATTGGCCAA TGTTACCTAC ATCACCATGG AAATTTTCAT TGGACTCTGC GCCATAGTGG GCAACGTGCT GGTCTCTGCT  
TGCTCAAGC TGAACCCAG CCTGCAGACC ACCACCTTCT ATTTTATTGT CTCTCTAGCC CTGGCTGACA TTGCTGTTGG  
GGTGTGGTCT ATGCCCTTGG CCATTGTTGT CAGCTGGGC ATCACAATCC ACTTCTACAG CTGCCTTTT ATGACTTGCC  
TACTGCTTAT CTTTACCCAC GCCTCCATCA TGTCTTGTCT GGCCATCGCT GTGGACCGAT ACTTGGGGT CAAGCTTACC  
GTCAGGTAGC CTGCGGCGTG GGGTGGGCAG CAATTGAGGC AGCTGGGAAA TGAGGCTACA AAGCCAGAGC CTGCTGAATT  
TTATTTTGA CTGTACATAT TTAGATGCTT AAGGTAATAA TGATAAAGCC CTCAAGCCAC TGTGTGGGTT GGGTCCAAGT  
GTCTCTGCT GCTGCCTCTC TAACACGCTT GGTAAATAA ATCCCTTGG ATGGTGCTGA GAAGCACCTG AACCAAGTGG  
GTCCCAAAT AACTATGGCG TGCAAGTGTG TGGTCCAG AAGTTGGTGA CTAGGTAAGC GACTCAGGA GAGGGGCTGA  
TTCCAGACA GTGCGCTGTT CCTGTGGGA TGGGGCTGAG GCTTGGGGAA TGTGGGCAGG AGGATATGCC ATTTGATTCT  
GTGACACAG TTCTTTTCCC TTCTTCTGT ATGTCTGGTC ATTCTGCTAT TCTGTGCTC CTCACATAGG TTGGACATTG  
GCCGGCTGCC AGCATAAGTG CCAGTGTGAT TTTGTAGGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA  
TGCTTCTCAG AGGTGCTGAG TTTTGCCTT TCTGACAGG GAATCTTGC TTATCCCTTT GACCAAGGAT CTTTGTCCA  
AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT AAGGTTAGGA  
GGCTGCCACC AAAGTCTCTT TTTTGTCTC CTGCTTCTC CGTTTGCTC CTTATCATGA GATCTTTTGG CTAAGCTGGC  
AGAAAGATTG CATAATCAGT GCTTCCAGCT CCGTCCAC CTGATCCTGC ACTGCTCTT GGTCCCTGAA TGAATGAAT  
CTGATACCCA ATCTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCTC TTCTGCTCTT TCCATCTTT TGCTGAGAGT  
TACTGAGCTC TGACTTCTT CTTGGCCCAT CCACTTCTT GAAACACCCC TGAAGAGGGT TGCTTATCTT GATGGAATC  
AAAAAGCCAA AAAGCTGCAG GCAGAGGCGT TGAGGACATC TGTTTGGGGA ACTAAGAGCA GCAGCACTT CAGATTCACT  
CCATATAGAG CTGTCTTACA GCATTCTGGA AACTTGAGGA TGTGCGGTGC ATAAAGGGG TGAAGTGAC CCACCTGTGA  
TGAGCCCTTT CTAAGGAGAA GGGTTTCCAA GAGATCACCC CACCAGAAAA GGTAGGAAT GAGCAAGTTG GGAATTTAG

ACTGTCACCTG CACATGGACC TCTGGGAAGA CGTCTGGCGA GAGCTAGGCC CACTGGCCCT ACAGACGGAT CTTGCTGGCT  
CACCTGTCCC TGTGGAGGTT CCCCTGGGAA GGCAAGATGC CCAACAACAG CACTGCTCTG CGAATTCGGG GGACATCTGT  
TTGGGGAAC AAGAGCAGCA GCACTTTCAG ATTCAGTCCA TATAGAGCTG TCCTACAGCA TTCTGGAAAC TTGAGGATGT  
GCGGTGCATA AACGGGCTGG AAGTGACCCA CCGTGATGA GCCCTTTCTA AGGAGAAGGG TTTCGAAGAG ATCACCCAC  
CAGAAAAGGG TAGGAATGAG CAAGTTGGGA ATTTAGACT GTCACTGCAC ATGGACCTCT GGAAGACGT CTGGCGAGAG  
CTAGGCCCCAC TGGCCCTACA GACGGATCTT GCTGGCTCAC CTGTCCCTGT GGAGGTTCCC CTGGGAAGGC AAGATGCCCA  
ACAACAGCAC TGCTCTGTCA TTGGCCAATG TTACCTACAT CACCATGGAA ATTTTCATTG GACTCTGCGC CATAGTGGGC  
AACGTGCTGG TCATCTGCGT GGTCAAGCTG AACCCAGCC TGCAGACCAC CACCTTCTAT TTCATTGTCT CTCTAGCCCT  
GGCTGACATT GCTGTGGGG TGTGGTCAT GCCTTTGGCC ATTGTGTCA GCCTGGGCAT CACAATCCAC TTCTACAGCT  
GCCTTTTAT GACTTGCCTA CTGCTTATCT TTACCCACGC CTCCATCATG TCCTTGCTGG CCATCGCTGT GGACCGATAC  
TTGCGGGTCA AGCTTACCGT CAGATACAAG AGGGTCACCA CTCACAGAAG AATATGGCTG GCCCTGGGCC TTTGCTGGCT  
GGTGTCTTC CTGGTGGGAT TGACCCCAT GTTTGGCTGG AACATGAAAC TGACCTCAGA GTACCACAGA AATGTACCT  
TCCTTTTAT CCAATTTGTT TCCGTCTATG GGATGGACTA CATGTGTATC TTCAGTCTC TCACCTGAGT TTTTCATCCC  
CTGGTTGTCA TGTGCGCCAT CTATCTTGAC ATCTTTTACA TCATTGGAA CAACTCAGT CTGAACCTAT CTAACCTCAA  
AGAGACAGGT GCATTTTATG GACGGGAGTT CAAGACGGCT AAGTCTTGT TTCTGGTTCT TTTCTGTTT GCTCTGTCT  
GGCTGCCTT ATCTCTCATC AACTGCATCA TCTACTTAA TGGTGAGGTA CCACAGCTTG TGCTGTACAT GGGCATCCTG  
CTGTCCCATG CCAACTCCAT GATGAACCT ATCGTCTATG CCTATAAAT AAAGAAGTTC AAGGAAACCT ACCTTTTGAT  
CCTCAAAGCC TGTGTGGTCT GCCATCCCTC TGATTCTTTG GACACAAGCA TTGAGAAGAA TTCTGAGTAG TTATCCATCA  
GAGATGACTC TGTCTCATTG ACCTTCAGAT TCCCATCAA CAAACACTTG AGGGCCTGTA TGCTGGGCC AAGGGATTTT  
TACATCCTTG ATTACTTCCA CTGAGGTGGG AGCATCTCCA GTGCTCCCCA ATTATATCTC CCCCCTCCA CTACTCTCT  
CCTCCACTC ATTTTCTCT TGTCTTCT CTCTAATTA GTGTTTGGG GGCCTGACT GGGGACAACG TATTATTGAT  
ATTATTGTCT GTTTTCTCT TTCCCAATAG AAGAATAAGT CATGGAGCCT GAAGGGTGCC TAGTTGACTT ACTGACAAA  
GGCTCTAGT GGGCTGAACA TGTGTGGT GGTGACTCAT TTCCATGCCA TTGTGGAATT GAGCAGAGAA CCGCTCTCG  
GAGGATGCT AGGAGATGTT GGAACAGAA GAAATAAAT GAGTTAAGG GGGACTTAA CTGCTGAATT C  
GAATCCCAG ATGGGCAGAG GTGGCTGGG TGGTGACCT AAGTGTGTCT CTGCTTTA TTCTCTAG TGGGTATTC  
TTTCATGTG TATCTGCT ACAGCATGCT GTGTTGGAC ACAAACCCCT TTCTTGTT TCTCTGACCC AGCTGAGATG  
GACTGATTCC AAAAGAACTC ACCTATGTAC TGGGGTAGGG GAGGGAGGGT TTTTGCAGT ATTTAACTAA GGTCAAAGA  
GTCTATATA GTGAGAAAGG CTCTTTTTT TTTTTTTTT TTTTGGCA GAGTGCTGCC TCCTAGAAAT TTCTCTGGT  
AACTTCTTC TCTGAAGCAC AGATAAGAA AACAATTACA GTAGAAACAT TTATGAGGA CATATTGGAG GCCGATGAAG  
CTTTTCAAGT TCCAGCATG CAGGATGTG GGCAGAACTG ACATTGGAAA ATACTAGAAT GATGGAATT CATTTGGAGA  
GGACTGCGCT TTTAATGTC TGGGGAGTCT GCTCAGGGAG AAATGACAAG TCTGGCGGG ACAAGTATGG GATTGGTAA  
GACTTGGATC AACTTGGAT ACAGGGTGGG GGTGGGAGT GGAATCAATG AATGATGCCA GAGCAGATCA ACTAACAAGA  
GGACCTGAT GAGCCCCAGG CAGAGGCTC TCCCTATGC CCCACTCTGA AGTGTGTT AGTAAACACC AGAACGCCAT  
TGTGTACT GCTGAATTT ATTTGGGCT GTACATATT AGATGCTTAA GGTAAAAATG ATAAAGCCCT CAAGCCACTG  
TGTGGGTTG GGTCCAAGTG TTCTTCTG CTGCTCTCT AACACGCTG GTTAAAAATA TCCCTTGGG TGGTGCTGAG  
AAGCACCTGA ACCAAGTGGG TCCCCAATA ACAATGGCGT GCAAGTGTCT GGTCCCAGA AGTTGGTGAC TAGGTAAGCA  
GCTTCAGGA GAGGGGGCTG ATCCCAGAC AGTCGCTGT TCTGCGGGG ATGGGGCTGA GGCTGGGGA ATGTGGGAG  
GAGGATATGC CTTTGATTC TGTGACAC GTCCTTTCT CTCTTCTG TATGCTGGT CATCTGTCTA TTCTGTCTG  
CCTCATATAG GTTGGACATT GGCCGGCTG CAGCATAAGT GCCAGTGTGA TTTTGCTAGG TGTGAGCTGA GAAAGAGAGG  
TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTGGCCT TCTGAGCAGG GAATCTTGC TTATCCCTT  
GACCAAGGAT CTTTGCTGCA AAGGCTGGT ATCGGCTGT CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT  
AGTTCTGGCT AAGGTAGGA GGCTGCCACC AAAGTCTCT TTTGTTCCT CTGCTCTCC CGTTTGCCTC CTATCATGA  
GATCTTTTG CTAAGCTGGC AGAAAGATT CATAGTCACT GCTTCCAGCT CTGCTCCAC CTGATCCTGC ACTGTCTCT  
GGTCCCTGAA TGAATGAACT CTGATACCA ATCTTGTCT GAGCCTTCT TATGCCACTC ATGGCTCCTC TTCTGTCTT  
TCCATCTTT TGTGAGAGT TCTGAGCTCT GTACTTCTC TTGGCCATC TCACTTCTG AAACACCCCT GAAGAGGGT  
GCTTATCTG ATGGAACCA AAAAGCCAAA AAGCTGCAGG CAGAGCGCTT GTTGGGGA GAGGACATCT GTTGGGGA CTAAGAGCAG  
CAGCACTTC ATAGTCACT CATATAGAGT GTCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT  
GGAAGTGACC CACCTGTGAT GAGCCCTTC TAAGGAGAAG GGTTCCAAAG AGATACCCC ACCAGAAAAG GGTAGGAATG  
AGCAAGTTGG GAATTTTGA CTGTCACTGC ACATGGACCT CTGGGAAGAC GTCTGGCGAG AGCTAGGCCC ACTGGCCCTA  
CAGACGGATC TTGCTGGCTC ACCTGTCCCT GTGGAGGTT CCCTGGGAAG GCAAGATGCC CAACAACAGC ACTGCTCTGT  
CATTGGCCAA TGTTACCTAC ATCACCATGG AAATTTTCAT TGGACTCTGC GCCATAGTGG GCAACGTGCT GGTCTCTGC  
GTGGTCAAGC TGAACCCAG CCTGCAGACC ACCACCTCT ATTTCAATTG CTCTAGACC CTGGCTGACA TTGCTGTGG  
GGTGCTGGT ATGCCCTTGG CCATTGTTG CAGCCTGGC ATCAACAATC ACTTCTACAG CTGCTTTT ATGACTTGGC  
TACTGCTTAT CTTTACCAC GCCTCCATCA TGCTTGTCT GGCCATGCT GTGGACCGT ATTTGCGGT CAAGCTTACC  
GTCAAGTAGC GTGCGCGTG GGTGGGCGAG CAATTGAGG CAGTGGGAAA TGAGGCTACA AAGCCAGAGC CTGCTGAATT  
TTATTTTGA CTGTACATAT TTAGATGCTT AAGGTAAAAA TGATAAAGCC CTCAAGCCAC TGTGTGGGT GGTCCAAGT  
GTTCTTGTCT GTGCTCTC TAACACGCT GGTAAAAA ATCCCTTGG ATGGTGTGA GAAGCACCTG AACCAAGTGG  
GTCCCAAAT AACTATGGCG TGCAAGTGTG TGGTCCCAG AAGTTGGTGA CTAGGTAAGC GACTCAGGA GAGGGGCTGA  
TTCCAGACA GTCGCTGTT CCGTGTGGG TGGGCTGAG GCTTGGGGA TGTGGGAGG AGGATATGCC ATTTGATTCT  
GTTGCACAG TTTTCTCC TTTTCTGT ATGTCTGGT ATTCTGTAT TCTGTCTC CTCACATAGG TTGGACATTG  
GCCGGCTGCC AGCATAAGTG CAGTGTGAT TTTGCTAGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA  
TGCTTCTAG AGGTGCTGAG TTTTGGCT TCTGACAGG GAATCTTGC TTATCCCTT GACCAAGGAT CTTTGTCTG  
AAGGCTGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT  
GCTTATCTG ATGGAACCA AAAAGCCAAA AAGCTGCAGG CAGAGCGCTT GTTGGGGA GAGGACATCT GTTGGGGA CTAAGAGCAG  
CAGCACTTC ATAGTCACT CATATAGAGT GTCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT  
GGAAGTGACC CACCTGTGAT GAGCCCTTC TAAGGAGAAG GGTTCCAAAG AGATACCCC ACCAGAAAAG GGTAGGAATG  
AGCAAGTTGG GAATTTTGA CTGTCACTGC ACATGGACCT CTGGGAAGAC GTCTGGCGAG AGCTAGGCCC ACTGGCCCTA  
CAGACGGATC TTGCTGGCTC ACCTGTCCCT GTGGAGGTT CCCTGGGAAG GCAAGATGCC CAACAACAGC ACTGCTCTGT  
CATTGGCCAA TGTTACCTAC ATCACCATGG AAATTTTCAT TGGACTCTGC GCCATAGTGG GCAACGTGCT GGTCTCTGC  
GTGGTCAAGC TGAACCCAG CCTGCAGACC ACCACCTCT ATTTCAATTG CTCTAGACC CTGGCTGACA TTGCTGTGG  
GGTGCTGGT ATGCCCTTGG CCATTGTTG CAGCCTGGC ATCAACAATC ACTTCTACAG CTGCTTTT ATGACTTGGC  
TACTGCTTAT CTTTACCAC GCCTCCATCA TGCTTGTCT GGCCATGCT GTGGACCGT ATTTGCGGT CAAGCTTACC  
GTCAAGTAGC GTGCGCGTG GGTGGGCGAG CAATTGAGG CAGTGGGAAA TGAGGCTACA AAGCCAGAGC CTGCTGAATT  
TTATTTTGA CTGTACATAT TTAGATGCTT AAGGTAAAAA TGATAAAGCC CTCAAGCCAC TGTGTGGGT GGTCCAAGT  
GTTCTTGTCT GTGCTCTC TAACACGCT GGTAAAAA ATCCCTTGG ATGGTGTGA GAAGCACCTG AACCAAGTGG  
GTCCCAAAT AACTATGGCG TGCAAGTGTG TGGTCCCAG AAGTTGGTGA CTAGGTAAGC GACTCAGGA GAGGGGCTGA  
TTCCAGACA GTCGCTGTT CCGTGTGGG TGGGCTGAG GCTTGGGGA TGTGGGAGG AGGATATGCC ATTTGATTCT  
GTTGCACAG TTTTCTCC TTTTCTGT ATGTCTGGT ATTCTGTAT TCTGTCTC CTCACATAGG TTGGACATTG  
GCCGGCTGCC AGCATAAGTG CAGTGTGAT TTTGCTAGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA GCAGGTGTGA  
TGCTTCTAG AGGTGCTGAG TTTTGGCT TCTGACAGG GAATCTTGC TTATCCCTT GACCAAGGAT CTTTGTCTG  
AAGGCTGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TAGCAGGAAT AGTTCTGGCT GCTTATCTG  
GGCTGCCACC AAAGTCTCT TTTTGTCT CTGCTTCTC CGTTTGCCTC CTATCATGA GATCTTTTG CTAAGCTGGC  
AGAAAGATTG CATAATCAGT GCTTCCAGCT CCGTCCAC CTGATCCTGC ACTGTCTCT GGTCCCTGAA TGAATGAACT  
CTGATACCA ATCTTGTCTC GAGCCTCTC TATGCCACTC ATGGCTCCTC TTCTGTCTT TCCATCTTT TGTGAGAGT

TACTGAGCTC TGTACTTCCT CTTGGCCCAT CTCACTTCCT GAAACACCCC TGAAGAGGGT TGCTTATCTT GATGGAACCTC  
AAAAAGCCAA AAAGCTGCAG GCAGAGGCGT TGAGGACATC TGTITGGGGA ACTAAGAGCA GCAGCACTTT CAGATTTCAGT  
CCATATAGAG CTGTCCTACA GCATTCTGGA AACTTGAGGA TGTGCGGTGC ATAAAGGGGC TGGAAGTGAC CCACCTGTGA  
TGAGCCCTTT CTAAGGAGAA GGGTTTCCAA GAGATCACCC CACCAGAAAA GGGTAGGAAT GAGCAAGTTG GGAATTTTAG  
ACTGTCACTG CACATGGACC TCTGGGAAGA CGTCTGGCGA GAGCTAGGCC CACTGGCCCT ACAGACGGAT CTGTCTGGCT  
CACCTGTCCC TGTGGAGGTT CCCTGGGAA GGCAAGATGC CCAACAACAG CACTGCTCTG CGAATTCGGG GGACATCTGT  
TTGGGGAAC TGAAGCAGCA GCACTTTCAG ATTCAGTCCA TATAGAGCTG TCCTACAGCA TTCTGGAAAC TTGAGGATGT  
GCGGTGCATA AACGGGCTGG AAGTGACCCA CCGTGATGA GCCCTTTCTA AGGAGAAGGG TTTCCAAGAG ATCACCACAC  
CAGAAAAGGG TAGGAATGAG CAAGTTGGGA ATTTAGACT GTCACTGCAC ATGGACCTCT GGAAGACGT CTGGCGAGAG  
CTAGGCCAC TGGCCCTACA GACGGATCTT GCTGGCTCAC CTGTCCCTGT GGAGGTTCCC CTGGGAAGGC AAGATGCCCA  
ACAACAGCAC TGCTCTGTCA TTGGCCAATG TTACCTACAT CACCATGGAA ATTTTCATTG GACTCTGCGC CATAGTGGGC  
AACGTGCTGG TCATCTGCGT GGTCAAGCTG AACCCAGCC TGCAGACCAC CACCTTCTAT TTCATTGTCT CTCTAGCCCT  
GGCTGACATT GCTGTGGG TGCTGGTCA GCCTTTGGCC ATTTGTGTC GCCTGGGCAT CACAATCCAC TTCTACAGCT  
GCCTTTTTAT GACTTGCTA CTGCTTATCT TTACCCACGC TCCATCATG TCCTTGCTGG CCATCGCTGT GGACCGATAC  
TTGCGGGTCA AGCTTACCGT CAGATACAAG AGGGTCACCA CTCACAGAAG AATATGGCTG GCCCTGGGCC TTTGCTGGCT  
GGTGTCTTC CTGGTGGGAT TGACCCCAT GTTTGGCTGG AACATGAAAC TGACCTCAGA GTACCACAGA AATGTCACCT  
TCCTTTCATG CCAATTGTT TCCGTATGA GGATGGACTA CATGGTATAC TTCAGCTTCC TCACCTGGAT TTTTCATCCC  
CTGGTTGTCA TGTGCGCCAT CTATCTTGAC ATCTTTTACA TCATTGGAA CAACTCAGT CTGAACCTAT CTAACCCAA  
AGAGACAGGT GCATTTTATG GACGGGAGTT CAAGACGGCT AAGTCTTGT TTTCTGTTT TTTCTGTTT GCTCTGTCT  
GGCTGCTTT ATCTCTCAT AACTGCATCA TCTACTTAA TGGTGAGGTA CCACAGCTTG TGCTGTACAT GGGCATCCTG  
CTGTCCCAT CCAACTCCAT GATGAACCT ATCGTCTATG CCTATAAAAT AAAGAAGTTC AAGGAAACCT ACCTTTTGAT  
CCTCAAAGCC TGTGTGGTCT GCCATCCCTC TGATCTTTG GACACAAGCA TTGAGAAGAA TTCTGAGTAG TTATCCATCA  
GAGATGACTC TGTCTCATTG ACCTTCAGAT TCCCATCAA CAAACACTTG AGGGCCTGTA TGCCTGGGCC AAGGGATTTT  
TACATCCTTG ATTACTTCCA CTGAGGTGGG AGCATCTCCA GTGCTCCCA ATTATATCTC CCCCCTCCA CTACTCTCT  
CCTCCACTTC ATTTTCTCT TGTCTTTCT CTCTAATTCA GTGTTTGGG GGCCTGACTT GGGGACAACG TATTATTGAT  
ATTATTGTCT GTTTCTCTC TTCCAATAG AAGAATAAGT CATGGAGCCT GAAGGGTGCC TAGTTGACTT ACTGACAAAA  
GGCTCTAGTT GGGCTGAACA TGTGTGGT GGTGACTCAT TTCCATGCCA TTGTGGAAT GAGCAGAGAA CCGCTCTCG  
GAGGATGCCT AGGAGATGTT GGAACAGAA GAAATAAACT GAGTTAAAG GGGACTTAAA CTGCTGAATT C -3' (FRAG.  
NO:1675) (SEQ. ID NO:1688)

5'- CGAATTCGGG GGACATCTGT TTGGGGAAC TGAAGCAGCA GCACTTTCAG ATTCAGTCCA TATAGAGCTG  
TCCTACAGCA TTCTGGAAC TTGAGGATGT GCGGTGCATA AACGGGCTGG AAGTGACCCA CCGTGATGA GCCCTTTCTA  
AGGAGAAGGG TTTCCAAGAG ATCACCACAC CAGAAAAGGG TAGGAATGAG CAAGTTGGGA ATTTAGACT GTCACTGCAC  
ATGGACCTCT GGAAGACGT CTGGCGAGAG CTAGGCCAC TGGCCCTACA GACGGATCTT GCTGGCTCAC CTGTCCCTGT  
GGAGGTTCCC CTGGGAAGGC AAGATGCCCA ACAACAGCAC TGCTCTGTCA TTGGCCAATG TTACCTACAT CACCATGGAA  
ATTTTCATTG GACTCTGCGC CATAGTGGGC AACGTGCTGG TCATCTGCGT GGTCAAGCTG AACCCAGCC TGCAGACCAC  
CACCTTCTAT TCAATTGTCT CTCTAGCCCT GGCTGACATT GCTGTGGG TGCTGGTCA GCCTTTGGCC ATTTGTGTC  
GCCTGGGCAT CACAATCCAC TTCTACAGCT GCCTTTTAT GACTTGCTA CTGCTTATCT TTACCCACGC TCCATCATG  
TCCTTGCTGG CCATCGCTGT GGACCGATAC TTGCGGGTCA AGCTTACCGT CAGATACAAG AGGGTCACCA CTCACAGAAG  
AATATGGCTG GCCCTGGGCC TTTGCTGGCT GGTGTCTTC CTGGTGGGAT TGACCCCAT GTTTGGCTGG AACATGAAAC  
TGACCTCAGA GTACCACAGA AATGTCACCT TCCTTTCATG CCAATTGTT TCCGTATGA GGATGGACTA CATGGTATAC  
TTCAGCTTCC TCACCTGGAT TTTTCATCCC CTGGTTGTCA TGTGCGCCAT CTATCTTGAC ATCTTTTACA TCATTGGAA  
CAAACCTCAGT CTGAACCTAT CTAACCCAA AGAGACAGGT GCATTTTATG GACGGGAGTT CAAGACGGCT AAGTCTTGT  
TTCTGGTTCT TTTCTGTTT GCTCTGTCT GGTGCTCTT ATCTCTCAT AACTGCATCA TCTACTTAA TGGTGAGGTA  
CCACAGCTTG TGCTGTACAT GGGCATCCTG CTGTCCCAT CCAACTCCAT GATGAACCT ATCGTCTATG CCTATAAAAT  
AAAGAAGTTC AAGGAAACCT ACCTTTTGAT CCTCAAAGCC TGTGTGGTCT GCCATCCCTC TGATCTTTG GACACAAGCA  
TTGAGAAGAA TTCTGAGTAG TTATCCATCA GAGATGACTC TGTCTCATTG ACCTTCAGAT TCCCATCAA CAAACACTTG  
AGGGCCTGTA TGCCTGGGCC AAGGGATTTT TACATCCTTG ATTACTTCCA CTGAGGTGGG AGCATCTCCA GTGCTCCCA  
ATTATATCTC CCCCCTCCA CTACTCTCTT CCTCCACTTC ATTTTCTCT TGTCTTTCT CTCTAATTCA GTGTTTGGG  
GGCTGACTT GGGGACAACG TATTATTGAT ATTATTGTCT GTTTCTCTC TTCCAATAG AAGAATAAGT CATGGAGCCT  
GAAGGGTGCC TAGTTGACTT ACTGACAAAA GGCTCTAGTT GGGCTGAACA TGTGTGGT GGTGACTCAT TTCCATGCCA  
TTGTGGAAT GAGCAGAGAA CCGCTCTCG GAGGATGCCT AGGAGATGTT GGAACAGAA GAAATAAACT GAGTTAAAG  
GGGACTTAAA CTGCTGAATT C -3' (FRAG. NO: ) (SEQ. ID NO:2439)

5'- CTGCTGAATT TTATTTTGA CTGTACATAT TTAGATGCTT AAGGTAAAAA TGATAAAGCC CTCAAGCCAC TGTGTGGGT  
GGGTCCAAGT GTTCTTGCT GCTGCTCTC TAACACGCCT GGTAAAAATA ATCCCTTTGG ATGGTGCTGA GAAGCACCTG  
AACCAAGTGG GTCCCAAAAT AACTATGGCG TGCAAGTGTG TGGTCCCAG AAGTTGGTGA CTAGGTAAGC GACTCAGGGA  
GAGGGGCTGA TTCCAGACA GTCGCTGTT CCGCTGGGA TGGGGCTGAG GCTTGGGGA TGTGGGAGG AGGATATGCC  
ATTGATTCT GTTGACACG TTTTTCCTC TTTTCTGT ATGTCTGGT ATTCTGCTAT TCTGCTGTC CTCACATAGG  
TTGGACATTG GCCGGCTGCC AGCATAAGTG CCAAGTGTGAT TTTGCTAGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA  
GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTGGCCT TCTGAGCAGG GAATCTTTC TTATCCCTTT GACCAAGGAT  
CTTTGCTCCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT  
AAGGTTAGGA GGCTGCCAC AAAGTCTCT TTTTGTCTC TGCTTCTCC CGTTGCTC CTATCATGA GATCTTTTG  
CTAAGCTGGC AGAAGATTG CATAATCAGT GCTCCAGCT CCGCTCCAC CTGATCCTGC ACTGCTCTT GGTCCCTGAA  
TGAATGAACT CTGATACCA ATCTTGTCTC GAGCTTCTC TATGCCACTC ATGGCTCTC TTTGCTCTT TCCATCTTT  
TGCTGAGAGT TACTGAGCTC TGTACTTCT CTTGGCCAT CTCATTCTC GAAACACCCC TGAAGAGGGT TGCTTATCTT  
GATGGAACCT AAAAAGCCAA AAAGCTGCAG GCAGAGGCGT TGAGGACATC TGTITGGGGA ACTAAGAGCA GCAGCACTT

CAGATTTCAGT CCATATAGAG CTGTCCTACA GCATTCTGGA AACTTGAGGA TGTGCGGTGC ATAAAGGGGC TGGAAGTGAC  
CCACCTGTGA TGAGCCCTTT CTAAGGAGAA GGGTTTCCAA GAGATCACCC CACCAGAAAA GGGTAGGAAT GAGCAAGTTG  
GGAATTTTAG ACTGTCACTG CACATGGACC TCTGGGAAGA CGTCTGGCGA GAGCTAGGCC CACTGGCCCT ACAGACGGAT  
CTTGCTGGCT CACCTGTCCC TGTGGAGGTT CCCCTGGGAA GGCAAGATGC CCAACAACAG CACTGCTCTG -3' (FRAG. NO: )  
(SEQ. ID NO:2438)

5'-GAATCCCAG ATGGCAGAG GTGGTGGGC TGGTGACCCT AAGTGTGTCT CCTGCCTTA TTCTCTAG TGGGTTATTC  
TTTCATGTGG TATCTTGCTT ACAGCATGCT GTGTTTGGAC ACAAACCCCT TTCCTTGGTT TCTCTGACCC AGCTGAGATG  
GACTGATTCC AAAAGAACTC ACCTATGTAC TGGGGTAGGG GAGGGAGGGT TTTTTCAGT ATTTAACTAA GGTTCAAAAGA  
GTGCTATATA GTGAGAAAGG CTCTTTTTT TTTTTTTTT TTTTGGCA GAGTGTGCC TCCTAGAAAT TTCTCTGGT  
AACTTCCTTC TCTGAAGCAC AGATAAGAA AACAATTACA GTAGAAACAT TTATGAGGA CACATTGGAG GCCGATGAAG  
CTTTCAAGT TCCAGCAGTG CAGGGATGTG GGCAGAACTG ACATTGGAAA ATACTAGAAT GATGGAAATT CAGTTGGAGA  
GGACTGCCCT TTTAATGTC TGGGGAGTCT GCTCAGGGAG AAATGACAAG TCTGGCGGGG ACAAGTATGG GATTTGGTAA  
GACTTGGATC AACTTGGGAT ACAGGGTGGG GGTGCGGAGT GGAATCAATG AATGATGCCA GAGCAGATCA ACTAACAAGA  
GGACCTGTAG GAGCCCCAGG CAGAGGCGTC TCCCTATGC CCCACTGA AGTGTGTGT AGTAAACACC AGAACGCCAT  
TGTGTACT GCTGAATTTT ATTTGGGCT GTACATATTT AGATGCTTAA GGTAAAAATG ATAAAGCCCT CAAGCCACTG  
TGTGGGTTG GGTCCAAGTG TTCCTCTTG CTGCTCTCT AACACGCTG GTTAAAAATA TCCCTTGGG TGGTGTGAG  
AAGCACCTGA ACCAAGTGGG TCCCCAATA ACAATGGCGT GCAAGTGTCT GGTCCCAGA AGTTGGTGAC TAGGTAAGCA  
GCTTCAGGA GAGGGGGCTG ATTCCAGAC AGTCGCTGT TCTGCGGGG ATGGGGCTGA GGCTTGGGA ATGTGGGCG  
GAGGATATGC CATTGATTC TGTGACAC GTCCTTTCC CTCCTTCTG TATGTCTGGT CATTCTGCTA TTCTGTCTT  
CCTCATAG GTTGGACATT GGCCGGCTGC CAGCATAAGT GCCAGTGTGA TTTTGCTAGG TGTGAGCTGA GAAAGAGAGG  
TGGAGGCTAA GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTGGCCCT TCTGAGCAGG GAATCTTTC TTATCCCTTT  
GACCAAGGAT CTTTGTGCA AAGGTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT  
AGTTCTGGCT AAGGTTAGGA GGCTGCCACC AAAGTCTCTT TTTGTTCCT CTGCTTCTCC CGTTTGCTC CTTATCATGA  
GATCTTTTG CTAAGCTGGC AGAAAGATTG CATAGTCAGT GCTTCCAGCT CTGCTCCAC CTGATCCTGC ACTGTCTCT  
GGTCCCTGAA TGAATGAACT CTGATACCCA ATCTGTCTC GAGCCTCTC TATGCCACTC ATGGCTCTC TTCTGTCTT  
TCCATCTTT TGCTGAGAGT TCTGAGCTCT GTACTTCTC TTGGCCATC TCACTTCTG AAACACCCCT GAAGAGGGT  
GCTTATCTT ATGGAATCA AAAAGCCAAA AAGCTGCAGG CAGAGCGGT GAGGACATCT GTTTGGGGAA CTAGAGCAG  
CAGCACTTC AGATTCACT CATATAGAGC TGCTCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT  
GGAAGTGACC CACCTGTGAT GAGCCCTTC TAAGGAGAAG GGTTCGAAG AGATCACCCC ACCAGAAAAA GGTAGGAATG  
AGCAAGTTGG GAATTTTGA CTGTCACTGC ACATGGACCT CTGGGAAGAC GTCTGGCGAG AGCTAGGCC ACTGGCCCTA  
CAGACGGATC TGTCTGGCT ACCTGTCCCT GTGGAGTTCT CCTGGGAAG GCAAGATGCC CAACAACAGC ACTGCTGT  
CATTGGCCAA TGTTACCTAC ATCACCATGG AAATTTTCAT TGGACTCTGC GCCATAGTGG GCAACGTGCT GGTCATCTGC  
GTGGTCAAGC TGAACCCAG CCTGCAGACC ACCACCTTCT ATTTATTGT CTCTCTAGCC CTGGCTGACA TTGCTGTTGG  
GGTGTGGT ATGCTTTGG CCATTGTTGT CAGCCTGGG ATCACAATCC ACTTCTACAG CTGCCTTTT ATGACTTGCC  
TACTGCTTAT CTTTACCAC GCCTCCATCA TGTCTTGT GGCATCGCT GTGGACCGAT ACTTGGGGT CAAGCTTACC  
GTCAGGTAGC CTGCGGCGTG GGGTGGGCG CAATTGAGGC AGCTGGGAAA TGAGGCTACA AAGCCAGAGC -3' (FRAG.  
NO: ) (SEQ. ID NO:2437)

5'-CGAATTCGGG GGACATCTGT TTGGGAACT AAGAGCAGCA GCACTTTCAG ATTCAGTCCA TATAGAGCTG  
TCCTACAGCA TTCTGGAAC TTGAGGATGT GCGGTGCATA AACGGGCTGG AAGTGACCCA CCTGTGATGA GCCCTTCTA  
AGGAGAAGGG TTTCCAAGAG ATCACCAC CAGAAAAGGG TAGGAATGAG CAAGTTGGGA ATTTAGACT GTCAGTGCAC  
ATGGACCTCT GGAAGACGT CTGGCGAGAG CTAGGCCAC TGGCCCTACA GACGGATCTT GCTGGCTCAC CTGTCCCTGT  
GGAGGTCCC CTGGGAAGGC AAGATGCCA ACAACAGCAC TGCTGTGCA TTGGCCAATG TTACCTACAT CACCATGGAA  
ATTTTCATTG GACTCTGCG CATAGTGGG AACGTGCTGG TCATCTGCGT GGTCAAGCTG AACCACAGCC TGACAGACCAC  
CACCTTCTAT TTCAITGTCT CTCTAGCCCT GGCTGACATT GCTGTTGGG TGCTGGTCAT GCCTTTGGCC ATTGTTGTCA  
GCCTGGGAT CACAATCCAC TTCTACAGCT GCCTTTTAT GACTTGCTA CTGCTTATCT TTACCCACGC CTCCATCATG  
TCCTTGCTGG CCATCGCTGT GGACCGATAC TTGGGGTCA AGCTTACCGT CAGATACAAG AGGGTCACCA CTCACAGAAG  
AATATGGCTG GCCCTGGGCC TTTGCTGGCT GGTGCTATTC CTGGTGGAT TGACCCCAT GTTTGGCTGG AACATGAAAC  
TGACCTCAGA GTACCACAGA AATGTACCT TCCTTTCATG CCAATTTGTT TCCGTCATGA GGATGGACTA CATGGTATAC  
TTACAGCTTC TCACCTGGAT TTTCATCCCC CTGTTGTGCA TGTGCGCCAT CTATCTTGAC ATCTTTTACA TCATTGGAA  
CAAACCTAGT CTGAACCTAT CTAACCTCAA AGAGACAGGT GCATTTTATG GACGGGAGT CAAGACGGCT AAGTCTTGT  
TTCTGTTCT TTTCTGTTT GCTGTGCTAT GGCTGCCCTT ATCTCTATC AACTGCATCA TCTACTTAA TGGTGAAGTA  
CCACAGCTTG TGCTGTACAT GGGCATCCTG CTGTCCCATG CCAACTCCAT GATGAACCT ATCGTCTATG CCTATAAAAT  
AAAGAAGTTC AAGGAAACCT ACCTTTTGAT CCTCAAAGCC TGTGTGGTCT GCCATCCCTC TGATTCTTTG GACACAAGCA  
TTGAGAAGAA TTCTGAGTAG TTATCCATCA GAGATGACTC TGTCTCATG ACCTTCAGT TCCCATCAA CAACACTTG  
AGGGCTGTA TCCCTGGGCC AAGGATTTT TACATCTTG ATTACTCCA CTGAGGTGG AGCATCTCCA GTGCTCCCA  
ATTATATCTC CCCCACCA CTACTCTT CTCCACITC ATTTTCTT TGTCTTCT CTCTAATTCA GTGTTTGGGA  
GGCCTGACTT GGGGACAACG TATTATTGAT ATTATTGTCT GTTTTCTT TCCCAATAG AAGAATAAGT CATGGAGCCT  
GAAGGGTCC TAGTTGACTT ACTGACAAA GGTCTAGTT GGGCTGAACA TGTGTGTTG GGTGACTCAT TTCCATGCCA  
TTGTGAATT GAGCAGAGAA CCTGCTCTG GAGGATGCT AGGAGATGTT GGAACAGAA GAAATAAACT GAGTTAAGG  
GGGACTTAAA CTGCTGAATT C -3' (FRAG. NO: ) (SEQ. ID NO:2427)

5'-CTGCTGAATT TTATTTTGA CTGTACATAT TTAGATGCTT AAGGTAAAAA TGATAAAGCC CTCAGCCAC TGTGTGGGT  
GGGTCCAAGT GTTCTTGCT GCTGCTCTC TAACACGCT GGTAAAAATA ATCCCTTGG ATGGTGTGTA GAAGCACCTG  
AACAAGTGG GTCCCAAAAT AACTATGGG TGCAAGTGTG TGGTTCCAG AAGTTGGTGA CTAGGTAGG GACTCAGGA  
GAGGGGCTGA TTCCAGACA GTCGCTGTT CTTGCTGGA TGGGCTGAG GCTTGGGAA TGTGGGAGG AGGATATGCC  
ATTGATTCT GTTGACACG TCTTTTCC TCTTCTGT ATGTCTGGT ATTCTGCTAT TCTGTCTC CTCACATAGG  
TTGGACATTG GCCGGCTGCC AGCATAAGTG CCAAGTGTGAT TTTGCTAGG TGTGAGCTGA GAAAGAGAGG TGGAGGCTAA

GCAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTGGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT GACCAAGGAT  
 CTTTGCTCCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT AGTTCTGGCT  
 AAGGTTAGGA GGCTGCCACC AAAGTCTCTT TTTTGTCTCT CTGCTTCTCC CGTTTGCCCTC CTTATCATGA GATCTTTTGG  
 CTAAGCTGGC AGAAAGATTG CATAATCAGT GCTTCCAGCT CCGCTCCAC CTGATCCTGC ACTGCTCTCT GGTCCCTGAA  
 TGAATGAACT CTGATACCCA ATCTTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC TTCTGCTCTT TCCATCTTTT  
 TGCTGAGAGT TACTGAGCTC TGTACTTCTT CTTGGCCCAT CTCATTCTCT GAAACACCCC TGAAGAGGGT TGCTTATCTT  
 GATGGAACCT AAAAAGCCAA AAAGCTGCAG GCAGAGGCGT TGAGGACATC TGTTTGGGGA ACTAAGAGCA GCAGCACTTT  
 CAGATTCACT CCATATAGAG CTGTCTACA GCATTCTGGA AACTTGAGGA TGTGCGGTGC ATAAAGGGGC TGAAGTGAC  
 CCACCTGTGA TGAGCCCTTT CTAAGGAGAA GGGTTTCCAA GAGATCACCC CACCAGAAAA GGGTAGGAAT GAGCAAGTTG  
 GGAATTTTAG ACTGTCACTG CACATGGACC TCTGGGAAGA CGTCTGGCGA GAGCTAGGCC CACTGGCCCT ACAGACGGAT  
 CTTGCTGGCT CACTGTCCC TGTGGAGGTT CCCCTGGGAA GGCAAGATGC CCAACAACAG CACTGCTCTG-3' (FRAG. NO: )  
 (SEQ. ID NO:2426)

5'-GAATCCAG ATGGGCAGAG GTGGCTGGG TGGTGACCCT AAGTGTGTCT CTGCTTTA TTCTCTCTAG TGGTTATTC  
 TTTCATGTGG TATCTTGCTT ACAGCATGCT GTGTTTGGAC ACAAACCCCT TTCTTGGTT TCTCTGACCC AGCTGAGATG  
 GACTGATTCC AAAAGAACTC ACCTATGTAC TGGGGTAGGG GAGGGAGGGT TTTTGCAGT ATTAACTAA GGTCAAAGA  
 GTGCTATATA GTGAGAAAGG CTTCTTTTTT TTTTGTGCA GAGTGCTGCC TCCTAGAAAT TTCTTTGGT  
 AACTTCCTTC TCTGAAGCAC AGATAAAGAA AACAATTACA GTAGAAACAT TTATAGGGA CACATTGGAG GCCGATGAAG  
 CTTTTCAAGT TCCAGCAGTG CAGGGATGTG GGCAGAACTG ACATTGAAAA ATACTAGAAT GATGGAATTT CAGTTGGAGA  
 GGACTGCCCT TTTAATGTC TGGGGAGTCT GCTCAGGGAG AAATGACAAG TCTGGCGGGG ACAAGTATGG GATTTGGTAA  
 GACTTGGATC AACTTGGGAT ACAGGGTGGG GTCGCGGAGT GGAATCAATG AATGATGCCA GAGCAGATCA ACTAACAAGA  
 GGACCCTGAT GAGCCCCAGG CAGAGGCGTC TCCCTTATGC CCCACTCTGA AGTGTGTGTT AGTAAACACC AGAAGCCAT  
 TGTGTGTTACT GCTGAATTTT ATTTTGGGCT GTACATATTT AGATGCTTAA GGTAATAATG ATAAAGCCCT CAAGCCACTG  
 TGTGGGTTTG GGTCCAAGTG TTCCTTCTTG CTGCTCTCT AACACGCTG GTTAAATAA TCCCTTTGGA TGGTGCTGAG  
 AAGCACCTGA ACCAAGTGGG TCCCAAATA ACAATGGCGT GCAAGTGTCT GGTCCCGAGA AGTTGGTGAC TAGGTAAGCA  
 GCTTCAGGGA GAGGGGGCTG ATTCCAGAC AGTCGCTGT TCCTGCGGGG ATGGGGCTGA GGCTTGGGA ATGTGGGCAG  
 GAGGATATGC CATTGATTC TGTGACAC GTTCTTTTCC CTTCTTCTG TATGTCTGGT CATTCTGCTA TTCTGTGCTT  
 CTCACATAG GTTGGACATT GGCCGGCTGC CAGCAATAGT GCCAGTGTGA TTTTGCTAGG TGTGAGCTGA GAAAGAGAGG  
 TGGAGGCTAA CAGGTGTGA TGCTTCTCAG AGGTGCTGAG TTTTGGCCCT TCTGAGCAGG GAATCTTTGC TTATCCCTTT  
 GACCAAGGAT CTTTGTGCA AAGGCTGGGT ATCGGCTGTG CTCAGCAAAG CGTCAACTCG TGCAAGAACT TAGCAGGAAT  
 AGTTCTGGCT AAGGTTAGGA GGCTGCCACC AAAGTCTCTT TTTTGTCTCT CTGCTTCTCC CGTTTGCTC CTTATCATGA  
 GATCTTTTGG CTAAGCTGGC AGAAAGATTG CATAGTCAGT GCTTCCAGCT CTGCTCCAC CTGATCCTGC ACTGCTCTCT  
 GGTCCCTGAA TGAATGAACT CTGATACCCA ATCTTGTCTC GAGCCTTCTC TATGCCACTC ATGGCTCCTC TTCTGCTCTT  
 TCCATCTTTT TGCTGAGAGT TCTGAGCTCT GTACTTCTC TTGGCCCATC TCACTTCTG AAACACCCCT GAAGAGGGTT  
 GCTTATCTTG ATGGAACCTCA AAAAGCCAAA AAGCTGCAGG CAGAGGCGTT GAGGACATCT GTTTGGGGAA CTAAGAGCAG  
 CAGCACTTTC AGATTGATC CATATAGAGC TGTCCTACAG CATTCTGGAA ACTTGAGGAT GTGCGGTGCA TAAAGGGGCT  
 GGAAGTGACC CACCTGTGAT GAGCCCTTTC TAAGGAGAAG GGTTCCAAAG AGATCACCCC ACCAGAAAAA GGTAGGAATG  
 AGCAAGTTGG GAATTTTAGA CTGTCACTGC ACATGGACCT CTGGGAAGAC GTCTGGCGAG AGTGGGCCCT ACTGGCCCTA  
 CAGACGGATC TTGCTGGCTC ACCTGTCCCT GTGGAGGTTT CCCTGGGAAG GCAAGATGCC CAACAACAGC ACTGCTCTGT  
 CATTGGCCAA TGTTACCTAC ATCACCATGG AAATTTTCAT TGGACTCTGC GCCATAGTGG GCAACGTGCT GGTCTCTGCT  
 GTGGTCAAGC TGAACCCAG CTTGCAGACC ACCACCTTCT ATTTTATTGT CTCTCTAGCC CTGGCTGACA TTGCTGTTGG  
 GGTGCTGGTC ATGCTTTTGG CCATTGTTGT CAGCCTGGGC ATCACAATCC ACTTCTACAG CTGCTTTTAT ATGACTTGCC  
 TACTGCTTAT CTTTACCCAC GCCTCCATCA TGTCCTTGTG GGCCATCGCT GTGGACCGAT ACTTGGCGGT CAAGCTTACC  
 GTCAGGTAGC CTGCGCGGTG GGGTGGGCAG CAATTGAGGC AGCTGGGAAA TGAGGCTACA AAGCCAGAGC-3' (FRAG.  
 NO: ) (SEQ. ID NO:2425)

5'-GBG CB TGC-3' (FRAG. NO:1676) (SEQ. ID NO:1689)

5'-TTG TTG GGC-3' (FRAG. NO:1677) (SEQ. ID NO:1690)

5'-TGC CTT CCC BGG G-3' (FRAG. NO:1678) (SEQ. ID NO:1691)

5'-GTT GTT GGG CAT CTT GCC-3' (FRAG. NO:1679) (SEQ. ID NO:1692)

5'-GTG GGC CTA GCT CTC GCC-3' (FRAG. NO:1680) (SEQ. ID NO:1693)

5'-ACA GAG CA TGC TGT TGT TGG GCA TCT TGC CTT CCC AGG G-3' (FRAG. NO:1681) (SEQ. ID NO:1694)

5'-BCB GBG CB TGC TGT TGT TGG GCB TCT TGC CTT CCC BGG G-3' (FRAG. NO:1682) (SEQ. ID NO:1695)

5'-CCC TTT TCT GGT GGG GTG-3' (FRAG. NO:1683) (SEQ. ID NO:1696)

5'-GTG CTG TTG TTG GGC-3' (FRAG. NO:1684) (SEQ. ID NO:1697)

5'-TTT CTT CTG TTC CC-3' (FRAG. NO:1685) (SEQ. ID NO:1698)

5'-CCC TTT TCT GGT GGG GTG-3' (FRAG. NO:1686) (SEQ. ID NO:1699)

5'-GTG CTG TTG TTG GGC-3' (FRAG. NO:1687) (SEQ. ID NO:1700)

5'-TTT CTT CTG TTC CC-3' (FRAG. NO:1688) (SEQ. ID NO:1701)

#### Human IgE Receptor $\beta$ Nucleic Acid and Antisense Oligonucleotide Fragments

5'-TTT CCC CTG GGT CTT CC CTC CTG CTC TTT TTT C ATT TGC TCT CCT ATT ACT TTC TGT GTC CAT TTT TTC ATT  
 AAC CGA GCT GT BTT TGC TCT CCT BTT BCT TTC TGT GTC CBT TTT TTC BTT BBC CGB GCT GT-3' (FRAG. NO:1681)  
 (SEQ. ID NO:1692)

5'-CCC CTG GG-3' (FRAG. NO:1682) (SEQ. ID NO:1693)

5'-GCTCTCCTT-3' (FRAG. NO:1683) (SEQ. ID NO:1694)

5'-CBTTBCCGCGT-3' (FRAG. NO:1684) (SEQ. ID NO:1695)

5'-TTT CCC CTG GGT CTT CC-3' (FRAG. NO:1685) (SEQ. ID NO:1696)

5'-CTC CTG CTC TTT TTT C-3' (FRAG. NO:1686) (SEQ. ID NO:1697)

ATTGTGCTCTCCTATTACTTTCTGTGTCCATTTTTCATTAAACCGAGCTGT (FRAG 992) (SEQ. ID NO: 1002)

BTGTGCTCTCCTBTTCCTTTCTGTGTCCBTTCBTTBCCGBGCTGT (FRAG 993) (SEQ. ID NO: 1003)

**Human Fc-ε Receptor r CD23 Antigen (IgE Receptor) Nucleic Acid and Antisense Oligonucleotide Fragments**

5'-GCC TGT GTC TGT CCT CCT GCT TCG TTC CTC TCG TTC CTG CTT GGT GCC CTT GCC G GTC CTG CTC CTC CGG GCT GTG G GTC GTG GCC CTG GCT CCG GCT GGT GGG CTC CCC TGG CCT TCG CTG GCT GGC GGC GTG C GGG TCT TGC TCT GGG CCT GGC TGT GGC CGT GGT TGG GGG TCT TC GCT GCC TCC GTT TGG GTG GC TCT CTG AAT ATT GAC CTT CCT CCA TGG CGG TCC TGC TCT CCC GA TCT CTG BBT BTT GBC CTT CCT CCB TGG CGG TCC TGC TTG GBT TCT CCC GB-3' (FRAG 1685) (SEQ. ID NO:1696)

5'-GT CCT CCT-3' (FRAG 1686) (SEQ. ID NO: 1697)

5'-TGT GTC TGT CCT CC-3' (FRAG 1687) (SEQ. ID NO: 1698)

5'-GTG GCC CTG GC-3' (FRAG 1688) (SEQ. ID NO: 1699)

5'-CGT GGT TGG GG-3' (FRAG 1689) (SEQ. ID NO: 1700)

5'-TCT CTG BBT BTT GBC C-3' (FRAG1690) (SEQ. ID NO:1701)

5'-GCC TGT GTC TGT CCT CCT-3' (FRAG 994) (SEQ. ID NO: 1004)

5'-GCT TCG TTC CTC TCG TTC-3' (FRAG 995) (SEQ. ID NO:1005)

5'-CTG CTT GGT GCC CTT GCC G-3' (FRAG 996) (SEQ. ID NO: 1006)

5'-GTC CTG CTC CTC CGG GCT GTG G-3' (FRAG 997) (SEQ. ID NO: 1007)

5'-GTC GTG GCC CTG GCT CCG GCT GGT GGG CTC CCC TGG-3' (FRAG 998) (SEQ. ID NO: 1008)

5'-CCT TCG CTG GCT GGC GGC GTG C-3' (FRAG 999) (SEQ. ID NO: 1009)

5'-GGG TCT TGC TCT GGG CCT GGC TGT-3' (FRAG 1000) (SEQ. ID NO: 1010)

5'-GGC CGT GGT TGG GGG TCT TC-3' (FRAG 1001) (SEQ. ID NO: 1011)

5'-GCT GCC TCC GTT TGG GTG GC (FRAG 1002) (SEQ. ID NO: 1012)

5'-TCT CTG AAT ATT GAC CTT CCT CCA TGG CGG TCC TGC TTG GAT TCT CCC GA (FRAG 1003) (SEQ. ID NO: 1013)

5'-TCT CTG BBT BTT GBC CTT CCT CCB TGG CGG TCC TGC TTG GBT TCT CCC GB (FRAG 1004) (SEQ. ID NO: 1014)

**Human IgE Receptor α Subunit Nucleic Acid and Antisense Oligonucleotide Fragments**

5'-GCC TTT CCT GGT TCT CTT GTT GTT TTT GGG GTT TGG CTT ACA GTA GAG TAG GGG ATT CCA TGG CAG GAG CCA TCT TCT TCA TGG ACT CC TTC AAG GAG ACC TTA GGT TTC TGA GGG ACT GCT AAC ACG CCA TCT GGA GC BCB GTB GBG TGG GGT BTT CCB TGG CBG GBG CCB TCT TCT TCB TGG BCT CC TTC BBG GBG BCC TTB GGT TTC TGB GGG BCT GCT BBC BCG CCB TCT GGB GC GTT GTT TTT GGG GTT TGG CTT GCC TTT CCT GGT TCT CTT BCB GTB GBG TBG GGG BTT CCB TGG CBG GBG CCB TCT TCT TCB TGG BCT CC TTC BBG GBG BCC TTB GGT TTC TGB GGG BCT GCT BBC BCG CCB TCT GGB GC-3' (FRAG. NO: 1691) (SEQ. ID NO:1702)

5'-TGG BCT CC -3' (FRAG. NO: 1692) (SEQ. ID NO:1703)

5'-CCB TCT GGB-3' (FRAG. NO: 1693) (SEQ. ID NO:1704)

5'-CT GCT BBC BCG-3' (FRAG. NO: 1694) (SEQ. ID NO:1705)

5'-GTT TTT GGG GTT TG-3' (FRAG. NO: 1695) (SEQ. ID NO:1706)

5'-GCC TTT CCT GGT TCT CTT GTT GTT TTT GGG GTT TGG CTT-3' (FRAG. NO:1005) (SEQ. ID NO:1015)

5'-ACAGTAGAGTAGGGGATTCCATGGCAGGACCCATCTTCTTCATGGACTCC-3' (FRAG. NO:1006) (SEQ. ID NO:1016)

5'-TTC AAG GAG ACC TTA GGT TTC TGA GGG ACT GCT AAC ACG CCA TCT GGA GC-3' (FRAG. NO:1007) (SEQ. ID NO:1017)

5'-BCB GTB GBG TBG GGG BTT CCB TGG CBG GBG CCB TCT TCT TCB TGG BCT CC TTC BBG GBG BCC TTB GGT TTC TGB GGG-3' (FRAG. NO:1008) (SEQ. ID NO:1018)

5'-BCT GCT BBC BCG CCB TCT GGB GC-3' (FRAG. NO:1009) (SEQ. ID NO:1019)

5'-GTT GTT TTT GGG GTT TGG CTT-3' (FRAG. NO:1010) (SEQ. ID NO:1020)

5'-GCC TTT CCT GGT TCT CTT-3' (FRAG. NO:1011) (SEQ. ID NO:1021)

5'-BCBGTBGBTBGGGGBTTCBTTGGCBGGBCCBTCTTCTTCBTGGBCTCC-3' (FRAG. NO:1012) (SEQ. ID NO:1022)

5'-TTC BBG GBG BCC TTB GGT TTC TGB GGG BCT GCT BBC BCG CCB TCT GGB GC-3' (FRAG. NO:1013) (SEQ. ID NO:1023)

**Human IgE Receptor (Fc Epsilon R) Nucleic Acid and Antisense Oligonucleotide Fragments**

5'-GCC TGT GTC TGT CCT CCT GCT TCG TTC CTC TCG TTC CTG CTT GGT GCC CTT GCC G GTC CTG CTC CTC CGG GCT GTG G GTC CTC GCC CTG GCT CCG GCT GGT GGG CTC CCC TGG CCT TCG CTG GCT GGC GGC GTG C CCC BGB BCG BGB CCC GGB CCG BCB GGC CGT GGT TGG GGG TCT TC GCT GCC TCC GTT TGG GTG GC GAT CTC TGA ATA TTGA CCT TCC ATG GCG GTC CTG CTT GGA GBT CTC TGB BTB TTGB CCT TCC BTG GCG GTC CTG CTT GGB-3' (FRAG: 1696) (SEQ. ID NO:1707)

5'-TCG TTC CTC TCG-3' (FRAG: 1697) (SEQ. ID NO:1708)

5'-BGB BCG BGB C-3' (FRAG: 1698) (SEQ. ID NO:1709)

5'-TGB BTB TTGB-3' (FRAG: 1699) (SEQ. ID NO:1710)

5'-GCC TGT GTC TGT CCT CCT-3' (FRAG. NO:1014) (SEQ. ID NO:1024)

5'-GCT TCG TTC CTC TCG TTC-3' (FRAG. NO:1015) (SEQ. ID NO:1025)

5'-CTG CTT GGT GCC CTT GCC G-3' (FRAG. NO:1016) (SEQ. ID NO:1026)

5'-GTC CTG CTC CTC CGG GCT GTG G-3' (FRAG. NO:1017) (SEQ. ID NO:1027)

5'-GTC CTC GCC CTG GCT CCG GCT GGT GGG CTC CCC TGG-3' (FRAG. NO:1018) (SEQ. ID NO:1028)

5'-CCT TCG CTG GCT GGC GGC GTG C-3' (FRAG. NO:1019) (SEQ. ID NO:1029)

5'-CCC BGB BCG BGB CCC GGB CCG BCB-3' (FRAG. NO:1020) (SEQ. ID NO:1030)

5'-GGC CGT GGT TGG GGG TCT TC-3' (FRAG. NO:1021) (SEQ. ID NO:1031)

5'-GCT GCC TCC GTT TGG GTG GC-3' (FRAG. NO:1022) (SEQ. ID NO:1032)

5'-GBT CTC TGB BTB TTGB CCT TCC BTG GCG GTC CTG CTT GGB-3' (FRAG. NO:1023) (SEQ. ID NO:1033)



**Human High Affinity IgE Receptor Oligonucleotide Fragments**

5'-AACAAGAAAA GCGTTGGTAG CTCTGGTGAA TCCCAAAAGA ATGTGGCAGT TGCTAGCCAT GCTCCTGAAT  
ATGTATAAAC AGTACATCAT ATGACTAAGA GTTTGACTTA GGGGTTAGAT TTTATGTGT TGAACCCCAA ATTAGTTATT  
TAATAGTTGG CACCCCAAAA CAAGTTACTT AACCTCACTA AGGTTTCAGT TCCCTGTTTA TAAATGTAG ATAGTGATAG  
TATGTACTTT ATAGGATTAT TGTGAAAAAT AAATGAAATA TCAGATTTAT TTAGGATAAC ACCTGGCATA TGTTTGGTAT  
TCAGAATTAG TTGCTGCTGT TTTATTCTGC TCTCCCTTGC ATCCCACTTT TCTAAGTTGT AAATAAATA GTTGACACA  
GATTGACAGA TTAAGAAAAGG CTTGTGATTG TGCTAGACCT ATGCCATAGC CTCTGTCTCA CCAGATTCCA GGTGATATAG  
TGGAGGTGGG ATAGGGAGTG GAGTAAGTGG GTAAATATTA AATTGCCAG TTGGGCACCA TCCTGAATAT TATCTCTAAA  
GAAAGAAGCA AAACCAGGCA CAGCTGATGG GTTAACCAGA TATGATACAG AAAACATTTC CTCTGCTTT TGGTTTAA  
GCCTATATTT GAAGCCTTAG ATCTCTCCAG CACAGTAAGC ACCAGGAGTC CATGAAGAAG ATG GATCTTCATG  
TGGAACTGACT GGTTCATTC AATAGACTTA ATTCAGCAGT CTGTGGGGAA GAGCAAGGTA TGATAGAATG GTTCCTCAAG  
TGCTTCAGAT GTGAAGTGGG TTTAAATATA CTGTCCCTGT CTCTTCAGA GTTTTGGTAA AGATAAAAAA GGACACTCAT  
TTAAAGCAA TCTTTGCAAA TGACAAGCCA CTATAGACAT TAATAGAGTT TTCATTCCA GTATTATCAT TAATATCAGA  
TCCTGGAAGA AGGTTGAGCC TTGACCTAGA GCAAAAAAAC AGAAGAATTA GTAAAGGAAT CCTGGAGAAA GCCCTGCTG  
TGTATTTAAA GGAGAAAGGG AGATCATGTT GGGAAATTAT AATATTTAAA GTAAACAAAA GCTAGGAAGT AAAATAAAAT  
AAATTATATG GCCTAGATCC CCATAAGTAA TGGTTTAACT TCTGCCTCC TGTGTTCTGA GCCAGATTAG GGCACAGTAG  
AGAAAGAGGA GTCTCTGAAA ATGTTTCCAA TTTCGCTGGT CAGACAGCGG ATCATCAGTG AATCAGATGA AAATTTGTGG  
ATTTATGCAC TAACTGATCA GCAGGAAATT AAACAAGAAA AGCGTTGGTA GCTCTGGTGA ATCCCAAAAG AATTTGGCAG  
TTGCTAGCCA TGCTCCTGAA TATGTATAAA CAGTACATCA TATGACTAAG AGTTTGACTT AGGGTTAGA TTTATGTGT  
TTGAACCCCA AATTAGTTAT TTAATAGTTG GCACCCCAAA ACAAGTTACT TAACCTCACT AAGATTCACT TTTCTGTTT  
ATAAAATGTA GATAGTGATA GTATGTACTT TATAGGATTA TTGTGAAAAA TAAATGAAAT ATCAGATTTA TTAGGATAA  
CACCTGGCAT ATGTTTGGTA TTCAGTAATT AGTTGCTGCT GTTTTATTCT GCTCTCCCT GCATCCCACT TTTCTAAGT  
GTAAACTAAA TAGTTGTACA CAGATTGACA GATTAAGAAA GGCTTGTGAT TGTGCTAGAC CTATGCCTCT CTCTACCAG  
ATTCAGGTG TATATGTGGA GGTGGGATAG GGAGTGGAGT AAGTGGGTAA ATATTAATTT GCCCAGTTGG GCACCATCT  
GAATATTATC TCTAAAGAAA GAAGCAAAAC CAGGCACAGC TGATGGGTTA ACCAGATATG ATACAGAAAA CATTTCTTC  
TGCTTTTGG TTTAAGCCT ATATTTGAAG CCTAGATCT CTCCAGACA GTAAGCACA GGAGTCCATG AAGAAGATGG  
CTCTGCCAT GGAATCCCT ACTCTACTGT GTGAGCCTT ACTGTTCTT GGTAAAGTAGA GATTCAATTA CCCCTCCAG  
GGAGGCCAA ATGAATTTGG GGAGCAGCTG GGGTAGGAAC CTTACTGTG GGTGGTGAAT TTTCTAGGA CATGTGCAA  
CTATTGGGCA TTTCCAGGG ACTCTGAGT GGAGCCAAGC TAGAAAGCAG AGGCAAGTGG GCTGAGCAAC ACCTAAGGAG  
GAAGCCAGAG TGAAGCTTG GTTCCTTGCA TTGCTCTGG CATCTCCAG AGTGCAAAAT TCTACCAAG GTAATGAGGG  
TAGAGGAGAG AAAGAAGCTC TTTCTCCCT GTATTCTAT TCCTGAAAAG ACGTTGGCT CTTAAAAATC CATGGATGA  
GATCTTATCC CCACACCCAG ATTCTAGTCC TCTGGAGATA AAGAAGACTG CTGGACACTA ATGTATCTCT CTGGACTTT  
TGCAGTCCA GATGGCGTG TAGCAGGTGA GTCCTCTGT CTGTTCCTT TGGTGTATCA ACATGTCTGG GCATTGCTTT  
CCTCTACTA TTTCTTCGT CCCATCACT CTGCTTCTA ATGAGCATGA ATCTGTCTT TGGCCAGACT ACTTCCCTC  
TCCACCTTG CTTGTCTTC TTTTCTCC TGATTCACT CATCTCTCA AGTCATTCTC TCTCTGTT TAGTCAATAA  
CCATGTCTG TGCACATATA CATGTCTCAT TCTCTCTCT AGACACTTG GCATGATCTC GCTCAATAAT TACATTATTA  
TTATTATTG CATTTTATA TTGAGGATGC TGAACTCAG TGATTTCTG GTGGTTACAT GGCTAAGGAA CTGGATTCA  
ACGTAAGTTC CTTGGATCTA AGTCCAGTTC TCTCTGACT ATATCACCT TTTGTTATCA CCTAGTATCT ACTTCTTTG  
TCTCTGTCA AATTTGCACT ACATCCCTT GTTCCAGGAA GCCATTCAAG ACTGACTTTC TTAGTGCTC TCACTACTT  
CTGGAACCTGA CATATGTTTT TCACTCTGTA TATACTTACA ATTAATAGT CATAAATAT CAGAGCTTG AGAAACCTTA  
TATTTATCC AGTCCAGTAA ATTTATCCAT CCATAATTCA CTCATTCACT CACATAATAA ATATTAAATG TAACAATGGT  
TGAACATGGC AGACAGTGT TCTACCTCAA AAGAGTCTC AGTCCTCAT TACAGATACT GAATTGAAAT TAACAGAAGT  
AGAGTAGTC AGCTCAAATC ACATAGTGAA TTGTTTCTT GTTTTTTAAA TCTCTGCAT ATGTGCTCTG TCTTCTCCC  
TGTGTTGGG GTTCCCTGGG GCACCAATAC TAATTTCTC TCCCCTAGA AATCAAAACA GGGTCTTATC ACCAACAGAA  
TAAGGACAGG TTGACCACTG ATTGTCAGAA TATTGCTCG TTTGTACTTT TAAGCCTAGA CAGTTTTCAA TGACTTTTT  
TCTCTTACA TGTCTTTCA TATTTTATC TTCTGAAGT CCTCAGAAA CCTAAGGTCT CTTGAACCC TCCATGGAAT  
AGAATATTA AAGGAGAGAA TGTGACTCT ACATGTAATG GGAACAATTT CTTGAAGTC AGTTCCACCA AATGGTTCCA  
CAATGGCAGC CTTTCAGAAG AGACAAATTC AAGTTTGAAT ATTTGTAATG CCAATTTGA AGACAGTGGG GAATACAAAT  
GTCAGACCA ACAAGTTAAT GAGAGTGAAC CTGTGTACCT GGAAGTCTC AGTGGTAAAT TCCAGGGATA TGGAAATACA  
GATCTCTCAT GTGAGGGATG GCTCATCTGA AGATGGGAAA AAACAGGTTA TTCCAAGGTT TAGGACACCA GAGTGGGATT  
CAAGGCTCT CATTTTAAAG ACCCTGCTAT TGGCTGGGCA CAGTGGCTCA CGCTGTAAT CCCAGCACTT TGGGAGGCTG  
AGGCAGGTGG ATCAGGAGGT CAGGAGATCG AGACCATCCG GCTAACATGG TGAACCCCA TCTCTGCTAA AAAATATATA  
TATATAAAAT TAGCCGGGCG TAGTGGTGGG CACCTGTAGT CCCAGGTAAT CGGGAGGCTG AGGCAGGAGA ATGGTGTGAA  
CCCAGGAGGT GGAGGTTGCA GTGAGCTGAG ATCAGCCAC TGCCCTCCAG CCTGGGCTAC AGAGCAAGAC TCCGTCTCAA  
AAAATAAATA AATAAATAA AAAGACCCCT GCATCTCTT TCTTCTACCC CTTTCCCTT TGATTACTTG TATGCTCTT  
TTCAATATTC TAGTCATCT TCAATATTAT TCTCCACCT TATTTCTCT TATCTTTCT GCCTAGATTG AGGTATATAT  
TATGTGGTCA AACAGCATGA CATATATGTG AACATTTCAA AGAGCTGTGT ATCTGGAATA GGATCAAAAG GTTTGACTTA  
AAGTTTGTCT CTGCATAATC CATATGGCAG GACCTGAATA TTAGGTTGTA CTCTCGTTA TGAACATAT CTGGGTACAT  
TTCTTATGT CCTCTGTTG TACTTAAGAA CACATATTC ATGCTGTGT CATTTTATC ACTCCTACTG CCAACAAATA  
GCATAGCATG CTTAGGCACA TGTGGCTTAA TTAGCAAATG TTGAATAAAC AAATTAATGA TTTTGAATAG TGACCAATAG  
GTCTCTTTA TACTCTATAT TTTTCTCTG AGTGAAAAAA AATGTTTCAA CCTCCATATG TAAATTTCAA ACACAACTA  
AAGCAATGTA AATAGCTTC TTTATTCCT GGAGTAGGTT CTAGAGAAGT CCTAAAGGAT TGGTCTCTAA TTAATTATGC  
TTATTATGCT AGCGATATTT CTTTCAAAA TTCTCTTTA ATGAATGCT TTTAATTTT ACAAAAGCAT TAACCATAGA  
ATGTGATTCT TGTCTTTCAC TGACTCATT GTGACAAATA TTTGTTGAGT ACCTACCAAC TCCTAAGTAT TGCTACCAAC  
TCCTAAATAC TGTGTTGGG ATTCAGAATA GAATGTAGAA CTAGACAGG TCCCTGACTT CTGGAGCAC AGAGCAGTAT  
GGGAAGAGGA CATTAATAA AGAATTACAT AAGTAATTAA TTTAAATTAT ACATGTTTGA AAGAAGTTTT TTTTGACAA  
CTATAATTAA CACTAGAACT GGAAGTTTC TATAAGGTAA GAGAGGACAA AATAGACACT CTCTAAGCT AAAATTTCCA  
AGAAAGACTG TTTATTTTCC CTAACCTAAC TAGAAGTAGC AACAGAAGAT CTGAAAGGAA TTCTGGCTTT CAAGTGTTC  
ATGTATGGAC TCATCAGGA GGTCCGAGAG GCTTGTGGC CCCAGACTGA CTTTCAGGA GGGGAAAGGA TTTATCAATA

CACAAGACAG GCTCTAAGCA TTATTTTGTG CCCTTTAAAA ATCCACTTTA TGAGCCAAAA AGTGAGTTAA TGATAATTCA  
TAGTTTCTGA CACATGCTCT ATGCGTGGCT CTCTTTCTC TATTCATTCT CTCTCTCTC ATTTATTGTT AAATAAATAA  
TGTAATGAAT GTTCTTCAGA CTGGCTGCTC CTTCAGGCCT CTGCTGAGGT GGTGATGGAG GGCCAGCCCC TCTTCTCAG  
GTGCCATGTT TGGAGGAAT GGGATGTGA CAAGGTGATC TATTATAAGG ATGGTGAAGC TCTCAAGTAC TGGTATGAGA  
ACCACAACAT TCCATTACA AATGCCACAG TTGAAGACAG TGGAACTTAC TACTGTACGG GCAAAGTGTG GCAGGTGGAC  
TATGAGTCTG AGCCCCCTCA CATTACTGTA ATAAAAGGTG AGTTGGTAAA GGAAAGGAAA AGCATCCATA GCAGGGGAAG  
GAAGAGAGAA CTCTGAGCC TGAGCAGTTG CAGCTTGTAG AAGGGGGGCA CCTGTGATAC ACTGGAAAAGC CTACCAGACT  
TGCAATGAGG AGACCTGGGT GATAGTATAT ATCTCAATCT CTGTTTCAAA GCCTTGACTT GTTAAATGGT GATAGTAATA  
CCTGCTTGCA CTATGAAATT TTTATGAAGA TTAATGTGGT AATATTTGTG AAATGACTTT GTAAACTGTT AAGCACTACC  
CAAGCATAAC AGATTGTGAT TACTATTTTG ATCTCAAGT CATCTGTTGC TCCTGGGGGA ACATTATAT TTATCAAAAT  
GAAAAAAAGT TTCAAAGTTG AATGAAGAAA GGATATAAG AGCTTGAGGA GCCATTCCA GCTTAGGAGG GCTGGGAAAG  
GAAACCAGCA AGTCAGTAAG CTGTGTGCTT GTGTATTGAG GGAGGAGGGA ATGGACTTGA TATGGAGAGG TAGGGGAGGT  
GGACTGCCTC TATGGCCTGT AAGAAAAACT GCTCTCTCCA AACTCTTTAT AAGAGAGGGA GCCTGTGAAG TATTCATTT  
TGAAGGAGAA AGTTAGACTT TTCCTTCACA CACTTTGTAC ATAATAATGT TAAAAAAGC ATGAGGTCAA AATACATAAT  
TAAGTCCTAG CAGTTCTCTG TTAATAATT TGAGACTGAA GTGCTATGTA CTGTCTCTA GGCTTCCAGT ATCTTCATCT  
GTAAACAGA ATATTTGGTC TAGATTCCAT TAGAATCATT TGATAACTTA AAAAAATAT TGATGCTCAT GTCTCATTTT  
TTGAGATTCT TATTAATTG GTTTGGGGT CAGCCTGGGT ATACGTATT TTATAGGCT TTTCACATAA TGGTAATTGG  
TAGCCAATAT TGAGAAATCAC TTGTCTAGGT GATCTTTAAA GATTTCTGG ATGTAATATT CTGAGGCTCT ATAATTGAG  
ACTAATCACA AAAATCGGTA CAGTTTATAA ACAGACTAAC AGAACCACAA AATAATAGAA TTGGAAGGCA ATTTAACTAG  
TGCAATTTCT TCATTTTGCC TAACAGGCAT GTAAGAAATG ATGATTGATT GAGTAATAGG CATTGATGAC CCCTGCTCTC  
ACTTTGTCCC CTTCACACC CTTAATTATA TGGAATTCT GGTCTGTGCA TTTCGAATAA GGGGTTTATC TTCTCTATTG  
TCTTCCCTC TGGGCACGGC AACTGGCTA CTGGAGTTAA GAGGAAATGC TTAGGACTCC CTGTGGCTCC AGGGAGCACC  
AACAGAGCAA CTCAACCTAG TGTTAATCTG AGTGTCTTCT CTGTCTTCT GGATGCCACA TCACGCTAAA AATGAAGGAC  
AAAGATTGGT TTCTCTCTA GGGAGGATGA AACTCTGAAC CTCAATTTTC AGTTCCTAAG ATGAATTATG TTCTCATTTG  
CATCTGTGTT CCACTACAGC TCCGCGTGAG AAGTACTGGC TACAATTTT TATCCCATTTG TTGGTGGTGA TTCTGTTTGC  
TGTGGACACA GGATTATTTA TCTCAACTCA GCAGCAGGTC ACATTTCTCT TGAAGATTAA GAGAACCAGG AAAGGCTTCA  
GACTTCTGAA CCCACATCCT AAGCCAAACC CCAAAAACAA CTGATATAAT TACTCAAGAA ATATTTGCAA CATTAGTTTT  
TTCCAGCAT CAGCAATTGC TACTCAATTG TCAAACACAG CTGCAATAT ACATAGAAAC GTCTGTGCTC AAGGATTAT  
AGAAATGCTT CATTAACCTG AGTGAACTG GTTAAAGTG ATGTAATAGT AAGTGCTCAA TTAACATTGG TTGAATAAAT  
GAGAGAATGA ATAGATTCT TATTAGCAT TTGTAAGAGA GATGTTCAAT TTCAATAAAA TAAATATAAA ATATGTTAAC  
AGAATGCTTC TGAGTATTCA AGGCTTGCTA GTTGTGTTGT TTGTTTCTA CTAAAGGCAA GGACCATGAA GTTCTAGATT  
GGAAATGTCC TCTCTGACT ATTGCAAGTG CGATCTAGGA ATGAAAAGAC ATAGGAGGAT GCCAGTGAGG TGGATCATT  
TTATGCTTCT TCTTCAGCTT ACTAAATATG AACTTTCAGT TCTTGGCAGA ATCAGGGAACA GTCTCAAGAC ATAGGACTCT  
CAGGATGAAG TAGAGTCCAG GATTCCTCTG TGATTGTTTT GCCCTCCCA AATTATATC TTGAACCTAT GTCTGTATC  
TTTATACAGC ACCTGAACCA AGCATTTTGG AGAAATTTCA GCTAATAATA ATAACCAAA CCTTCGGCTC TGAAACAGT  
CCAGGACTGA ATAAGATCTT GGGCAAAAGA ACTAGACAGT TTGTGTTTAT TTCCCTTTC ATTTATGTC TTCTCATAG  
TCATTGGAGG CTCATTCTTC TTGTCATGGA GTAAATGGGA TTAAGTTT TACTAAGAGT CTCCAGCATC TCCACCTGT  
CTACCACCGA GCATGGGCTT ATATTTGAAG CCTAGATCT CTCCAGCACA GTAAGCACA GGAGTCCATG AAGAAGATGG  
CTCCTGCCAT GGAATCCCCT ACTCTACTGT GTGTAGCCTT ACTGTTCTTC GCTCCAGATG GCGTGTAGC AGTCCCTCAG  
AAACCTAAGG TCTCCTTGAA CCCTCCATGG AATAGAATAT TTAAGGAGA GAATGTGACT CTACATGTA ATGGGAACAA  
TTTCTTTGAA GTCAGTTCCA CCAATGGTT CCACAATGGC AGCCTTTCAG AAGAGACAAA TTCAAGTTG AATATTGTGA  
ATGCCAAATT TGAAGACAGT GGAGAATACA AATGTCAGCA CCAACAAGTT AATGAGAGTG AACCTGTGTA CTGGAAAGTC  
TTCAGTGACT GGCTGCTCCT TCAGGCCTCT GCTGAGGTGG TGATGGAGGG CCAGCCCCCTC TTCTCAGGT GCCATGGTTG  
GAGGAACTGG GATGTGTACA AGGTGATCTA TTATAAGGAT GGTGAAGCTC TCAAGTACTG GTATGAGAAC CACAACATCT  
CCATTACAAA TGCCACAGTT GAAGACAGTG GAACCTACTA CTGTACGGGC AAAGTGTGGC AGCTGGACTA TGAGTCTGAG  
CCCCTCAACA TTAAGTAAAT AAAAGCTCCG CGTGAGAAGT ACTGGCTACA ATTTTATC CCATTGTTGG TGGTGATTT  
GTTTGTGCTG GACACAGGAT TATTTATCTC AACTCAGCAG CAGGTCACAT TTCTCTGAA GATTAAGAGA ACCAGGAAAG  
GCTTCAGACT CTGAACCA CATCCTAAGC CAAACCCCAA AAACAAGTGA TATAATTACT CAAGAAATAT TTGCAACATT  
AGTTTTTTT CAGCATCAGC AATTGCTACT CAAATGCTCA ACACAGCTTG CAATATACAT AGAAACGTCT GTGCTCAAGG  
ATTTATAGAA ATGCTTCATT AAAGTGTG AACTGGTTA AGTGGCATGT AATAGTAAGT GCTCAATTAA CATTGGTTGA  
ATAAATGAGA GAATGAATAG ATTCATTAT TAGCATTTGT AAAAGAGATG TTCAATTTCA ATAAATAAAA TATAAACCA  
TGTAACAGAA TGCTTCTGAG TAAAAAATAA AAAAAAATAA TCTCAATATA ATAATATTCT TTATTCTGG  
ACAGCTCGGT TAATGAAAAA ATGGACACAG AAAGTAATAG GAGAGCAAAT CTGCTCTCC CACAGGAGCC TTCCAGTGTG  
CCTGCATTG AAGTCTTGA AATATCTCCC CAGGAAGTAT CTTCAGGCAG ACTATTGAA TCGGCCTCAT CCCACCACT  
GCATACATGG CTGACAGTTT TGAATAAAGA GCAGGAGTTC CTGGGGGTAA CACAAATTTCT GACTGCTATG ATATGCCCTT  
GTTTTGGAAC AGTTGTCTGC TCTGTACTTG ATATTTACA CATTGAGGGA GACATTTTT CATCATTTAA AGCAGGTTAT  
CCATTCTGGG GAGCCATATT TTTTCTATT TCTGGAATGT TGTCATTTAT ATCTGAAAGG AGAAATGCAA CATATCTGGT  
GAGAGGAAGC CTGGGAGCAA AACTGCCAG CAGCATAGCT GGGGGAACGG GAATTACCAT CCGATCATC AACCTGAAGA  
AGAGCTTGGC CTATATCCAC ATCCACAGTT GCCAGAAAT TTTGAGACC AAGTGCTTTA TGGCTTCTT TTCCACTGAA  
ATTGTAGTGA TGATGCTGTT TCTACCAT CTGGGACTTG GTAGTGCTGT GTCATCACA ATCTGTGGAG CTGGGGAAGA  
ACTCAAAGGA AACAAGGTT CAGAGGATCG TGTATTGAA GAATTAACA TATATTACG TACTTACAGT GAGTTGGAAG  
ACCAGGGGA AATGCTCTCT CCCATTGATT TATAAGAATC ACGTGTCCAG AACACTCTGA TTCACAGCCA AGGATCCAGA  
AGGCCAAGGT CTGTGTAAGG GGCTACTGGA AAAATTTCTA TTCTCTCCAC AGCCTGCTGG TTTT AAGCTTTTCA  
AAGGTGCAAT TGGATAACT CTGCCATGAG AAATGGCTGA ATGGGACAC AAGTGGGGAC AATTCCAGAA GAAGGACACA  
TCTCTTTCTT TTCTGAGTT CTCTCTACC TTCTCACTC CTACTAAAT GTCTCATTTT CAGGTTCTGT AAATCCTGCT  
AGTCTCAGG AAAATTATGC TCCAGGAGTC TCAAATTTT TATTTCATA TTAGTCTTTA TTAGTAGAC TTCTCAATTT  
TTCTATTCT CACAAGTAAA AGCCTGTTGA TCTTAATCAG CCAAGAACT TATCTGTCTG CCAATGACT TATGTATAAA  
GAGAATCATC AATGTCTAGA GGTAACCCAT TTCAACTGCC TATTCAGAGC ATGCAGTAAG AGGAAATCCA CCAAGTCTCA  
ATATAATAAT ATCTTTTATT CCTGGACAGC TCGGTTAATG AAAAAATGGA CACAGAAAGT AATAGGAGAG CAAATCTTGC

TCTCCACAG GAGCCTTCCA GGTAGGTACA AGGTATTATT TTTTCTACC CTCAGTCACT TGTGGCAGGG GAAGTCATAG  
TCACGGTGCT TAGGAGATGA AACTTTATTG ATTTAGGCAT GGATCCATCT AGTTTAATTA ATATATTGGG TATGAGGAAG  
CTACTTGCTG TACTTTCCAT GTGGTCTCT CTCCCTGGAG AGGAACATTT TTA CTCTAGCT TGCAAACTGG AATAGATT  
TCTCACATTA GAAAGCTCATT TTCTGGGTAT GAGACAGGAG AGTTCATACT GTGTATGTAG ATCTCTGGCT TCTGGGTCTG  
ACATGTGCTG AGGGACACAT ATCCTTCACA CATGCTTTTA TAAATACTTG ATAAAGTAAC CTGCTTCTTG ATTGGTCTTT  
ATAATCCATA AGCTGTGGGA TGCTTCTCTG AAGATGAAAA TAGTAATAGA GTCCCATCTA GCTATTCAAA GCCATTCTCT  
CATTGTATTG TGTGCACATG AAGTTGGGGT TTGTTACTGA CAAAATATAT TCAGATACAT TTCTATGTTA AAAGGATTGT  
GAGATGCATA GGTAAATGTG TTTATTTTCA GTTTTACTTG TCAACATAGA TGAATGAGAA AGAAGTTGAA AGTAACACTG  
GATTAAGAAT AGGAAAAATTT GGCATGGATT TTGCTCCATT TTGTCCCATC TAATCACTTG GATAGTGTTG AGGTGTTCTT  
GGTCAGTTAC TTGGATGCTC TGAGCTTTAG TTCTTTGGTG ATTACGAATG AGATTTGAAT TACAGGATGG CTTTGAAAAA  
ATAAACAAAA CTCCCTTTTC TGTCTGTCGA GAATGTTGCA CAGGGAGTTA CAGAATGTTT TCATGACTGA ATTGCTTTTA  
AATTTACAG TGTGCTGCA TTTGAAGTCT TGGAAATATC TCCCAGGAA GTATCTTCAG GCAGACTATT GAAGTCGGCC  
TCATCCCCAC CACTGCATAC ATGGCTGACA GTTTTGAAAA AAGAGCAGGA GTTCTGGGG GTGAGTGAGC CTCCTCAAC  
TTTGACTAGA GTAAGGGTTG GGTCTAGAAA AGAATATTGA GTTGCAATCA CTGTTTTCCC ACTTGGATTG ATGAGAGGTG  
TTAGGTCCTT TAAAAACAT GGTAGATAAA GAGTTGACAT TAACTGGGTC CTTTTGGGAA GAGCCAGAAG CATTCTCTCA  
TAAAGACTTT AAATTGTAG GACGAGAATG GCCAACAGGA GTGAAGGATT CATACTTTA TCTTTACTTA GATGTAAAGA  
ACAATTACTG ATGTTCAACA TGACTACATA CATAAAGGCG CATGAGGAAA AGTATTGGCC TTCCATGCAT TAGGTAGTGC  
TTGTATCAAT TCTTATAGTG GCTAGGGTAT CCTGGAATAA CTTACGTGTG GATCATTCTT CAGGACAGTC TAGGACACTA  
ACGCAGTTTC TCATGTTTGG CTCTATTAT TAAAAATGA TACAATCTCG GGAAAAATTT TTTGATTTC ATGAAATTCA  
TGTGTTTTTC TATAGGTAAC ACAAATCTG ACTGCTATGA TATGCCTTTG TTTTGGAACA GTTGTCTGCT CTGTACTTGA  
TATTTACAC ATTGAGGGAG ACATTTTTC ATCATTTAAA GCAGGTTATC CATTCTGGGG AGCCATATT GTGAGTATAT  
ATCTATAATT GTTCTGAAA TAACACTGAA CATAGGTTTT TCTCTTCTC AGATCTAACC AGTTGTTTAT TCCCAGTATT  
AAGATGATAT TTATAATTCT TAATTATAAA TATATGTGAG CATATATAAC ATAGATATG TCATTAAACA CAACAAAAGA  
TTCTTTTAC AATTAACGGT GGGTTAAACA TTAGCCAC AGTTTTATCC CATGAGAAAC CTGAATCTAA TACAAGTTAA  
ATGACTGCC TAAGGGCCAC TTGACTAATA GTAATTGAAC CTAACTTTC AGAATCCAAC TCCAGGAACA TACTTCTAGC  
ACTATTCATC AATAAAGTTA TATGATAAAT ACATACAAC TATCTGTCA ACTAAAAATA ACAACAGAGG CTGGGCATGG  
TGGCTCACAC CCGTAATCCC AGCACTTTGG GAGGCTGAGG CAGGTGGATC ACCTGAGGTC AGGAGTTTGA GACCAGCCTG  
ACCAACATGG TGAACCTCA TCTCTACTAA ATATAAAAA TTAGCTGAGT GTGATAGTGC ATACCTGTAA TCCAGCTACT  
TAAGAGGCTG AGGCAGGAGG CTGTTTGA CTTGGGAGGC AGAGGTTGCA GTGAGTGCAT ATTGTGCCAT TGCCTCCAG  
CCTGGGCAAT AAGTGCGAAC TCTGTCTCAA AATAATAATA ATAATAATAG AAAATAAAGT TGTCTTCATG AAAAATGAGG  
AAAGAGATTG CTGGGGTGAG AAACATTAAG ATCAATGGGC ATATGGTGAC CTCTATGCC CTAGAAAATC TTTTANGGTA  
TTTTCTCTG GTATCTCTT TACNCATCGT TCTATCTGGA AAAATAGGTG GATGAGTGAG ATAATAACGG TATATACTTT  
TTAAAGGTCT AATTGACATA TATAAATTGC AAGTATTCA GATGTCAATT TGCTAACCTT GACACACATA GACACACATG  
AAAACATCAT CACATTAATA CAATGTATGT ATCCATCAT CCAAAGCTT CCTGTGTAT CTTTGTAACT CTTTCTCTCT  
CCCTCCACTC CTGTCTCT CTGTCCCAAG AAAACATTGA TCTGCTTCT GTGAATATAA ATTAACCTAC ATTTTITAGA  
GCTTTATATA AGTATGTTCT CTTTACTGTT TGTCTTCTT CGCTGCACAG TTATTTTGAG ATTCTTCAAG TTTTITCTT  
ATATCGATAC TTCATTCACA AGAATATATT TTAATTCTAG ACTATGTCAC ATTGACTTTG TCGTCTGCTA AATCCTTAGT  
GCTCAGATGA CTGTTCAGG ACTCTCCTG AACCTGTACC TCTGTTANAT TGAACCTTGT CTCTACTGTC TTTTATTTT  
AAACACAGCT TATTAGGTGT CTCTCAACCC ATCAAACNCA CAATCTGAGT CTTTAGGAGA TTGCTTTGAA TTTGTGCTAT  
TGACTATAT NTATATNAAA TNGTAAATG TTTGGTAAAA ATATCATCAT GTACNTTTT ATAATTACGC TATNTNCACA  
TGATATATGT CAGACTCTGG AAATATGCAT GCCACAGACA CGTGTCTT GCTAAAGGG GCTGATGAA GACNACATA  
CNAATAGACG ATTGCAGTAG AATGAGAGTG GTGGTCTAAN CAGTACATGT CCTGATGTTG CTCGGACAGT TACTACNCCA  
AGAGTACCCC CTGCATTGTC AGGGTTAGCA TCTCCTGGAA GCCTCATGTA AATGAAGAAT TTCATGCTCC ATCCAGGACC  
TAATGAATAA GAATCTGCAT TTAGCAAGA CCTCATATG ATTCATATAC ACTTTTTTT TTTTTTTTA GATGGAGTCT  
CACTCTGTG CCCCAGGCTG GAGTGCAATG GCATGATCTT GGCTCACTGC AACCTCTGCC TCCCGGGTTC AAGTGATTCT  
CCTGTCTCAG CCTCCCTAGT AGCTGGGACT ACAGGTGCAT GCCACAGTG CTGGCTAATT TTTGTATTT TAGTAGAGAC  
AGGGTTTAC CATTITGGTC AGGCTGGTCT TGAACCTATG ATCCCGGTG ATTCCCGGC CTGGCTTCC CAAAGTCTG  
GGATTACAGA CATGAGCCAC CACACCCGCC TTATTCGTAT ACNCAATTAA TTCTGAGAAG CACTCTATAG AAAATAAGAA  
TAAGAAAAATA TTGGGCTCAC AGGTGACATT AATAAGTAAC TTTATCGAGT ACCCAAAT TTACCTATGT TTGGAAGATG  
GGGTAAAAAG GACACATTGA AAACAAGAAC TCATTGTGGC TTTTTTTTCC TCTTTTGA ACAGTTTTCT ATTTCTGGAA  
TGTTGTCAAT TATATCTGAA AGGAGAAATG CAACATATCT GGTGAGTTGC CCGTTTCTGT CTTTGTCCAT CTTGAAAAAG  
ATAAGAAGAA CAGAGTTTTA AGAGTCTTAA GGGAAACACA TCTTGTCTC CTATATTACT TGTGAATGTG GATATATGAT  
TTTGTTCAA TCTATTTTGT GTCCTAAGGC TTTTGTGCA AGAAGTTGGA TATATCATTA GAAACATAAA TTGTACCAT  
TAACATACAT GAAGTTTATG TTTACCTTGA CGTCTTCTA AAAAGTGTCC TACACCGGCA TTGTCTTGT GGTTCCTGAA  
ACATGATCAA ATAAATAAT TAGTTTCAA TTAAGGAGAA TATTTGAGGA AAGACCGTAC GTGTTCTATG GTTCTCTGAA  
GGCAGTCCAG TGAGAAAGTA ATATATGCTT CATTAAACAA TGCGGACATT TTCAGGGTTT CCTTTTAA CCAAATTTG  
GAAGCAATGT GGAATTTACT GGATGCATCC AGCCCTGAAA TGAAGATAGG TTTATTGAAT GTGCCAGCAA GTGCAGGCCC  
AGGCTGAGT TTTCTTCAAT ATTATCAGT GAGAGGAAGC CTGGGAGCAA ACATGCCAG CAGCAGAGCT GGGGGAACGG  
GAATTACCAT CTTGATCATC AACCTGAAGA AGAGCTTGGC CTATATCCAC ATCCACAGTT GCCAGAAAT TTTTGAGACC  
AAGTGCTTTA TGGCTTCTT TTCCACTGTA TGTATTTTT TTTGTGTGGG AAGACTAAGA TTTGGGTCC TAATGTAAGT  
AAGAAGCCCT CTCTCTCTGT TCCATGAACA CCATCTTTT CTGTAACCTT TATTACACAG TATAGTGGTT CTGTAAGTTC  
ACACAGCCCA GGGAGATGCT GGCTGCCAC TCCCCTCAAC CCAGGCAAAT TCTCGGGGT TAAAGTTATC TACTGCAAGT  
GACGATCTCT GGGTTTTTCT GTGCCTGTGT TTGTGTGTGT GTGTGTGTGT GTGTGTGTGT GTATGTGTCA CTTAAAAAGG  
ACTGGTCAGA TGGTAGGGAG ATGAAAAACAG GAGATGCTAT AAGAAAAATA ACTTTTGGGG CGAATACCAA TGTGACTCTT  
TTTGTGTGCT ATTTGTGTGT GTTCAATAGG AAATGTAGT GATGATGCT TTTCTACCA TTTCTGGGACT TGGTAGTGTCT  
GTGTCACTCA CAATCTGTGG AGCTGGGAA GAACTGAAG AGATAAGAGT AGATAGAAG CCGATATAAA ATCTGTAAGT  
ACAGGTTAAC GAATTGGAGC TTTATCTCT AAAATATGGC CTGGGTTTT TGAACATTT CTTCCAGAAA ATAGTTTCTC  
CAAGTTTTAT TACTTTGGTT TACAAATCTC ACATTTAAAT CACATTTTAT ACCATAAGTA GCACACATTT CATAATATTC  
CTCTGAATGA GGGTTGGGAT AATAGGACTG ATATGTTAGA AATGCCTTAA AGTGTGTGGA GCATGAGAGA TGGATGTACA

GAAGGCTTGT GAGGAAACCA CCCAGGTATC TGGCCTTGTT TTCTGCCCA GAACTAGCCG CCTATTCTCG TTTCTGTTTT  
ATTCTTTTGT TTCTTGACTT TTCCTTTCCA ACTTGCTCTA AAACCTCAGT TTTCTTTTCT TTCTGATTCA TGACTACCAA  
ATGTTTTTAC TTGCCTCACC CGTCCATTAC ACCTTTGATA AGAACCACCA GACCTTGTGC TCATGTACTT GCCCATGTCT  
GATGGAAGAA ACATACTCTC TCCATCTGTC CACTTCTCTG AGGCATTCAA GTCTAGCCAC CTITTTAAAT CACTCTCTC  
CAGGCTGGGC ACGGTGTCAC GCCTGTAATC TCAGCACTTT GTGAGGCTGA GGAGGGCGGA TCACTTGAAG TACGAGATT  
AAAACCAGCC TGGCCAAATG GCAAAACCAA ATCTTCTTCA ATTATAACCA AATCTTAAAC CAAATCTCTA CTAATAAATA  
CAACAAAACA AAACAACAAC AAAAAAACA GAAAAGGAAA CATTAGCCCA GCGTGGTGGC AGGTACCTGA GGTTCAGAT  
ACTTGGGAGG CTGAAGCAGG AGAATCGCTT GAGCCCAAGA GATGGAGGTT GCAGTGAGCC GAGATCATGC CACTGCACCA  
CAGCCAGGGT GACAGAGCCA TACTTCCCAG CACATTGGGA GGCCAAAGCT GAAGAATAAT TTGAGGTGAG GATTTGGAGA  
CCAGCTGGC CAACATGGTG AAATCCGTC TGTACTAAAA ATATAAACT TAGTGGGGCA TGGGGGCACA ACCTGTAAAT  
TTCACTACT TAGGAGGCTG AGGCAGGAGA ATTGCTTGAA CCCGGGAGGC GGAAGTTGCA GTGAGCCAAG ATCTGGCCA  
CTGCACTCCA GCCTGGGTGA CATAGTGAGA TTCTGTCTCA AAAAAAATAA AAGAAATTTA AAAAACTACT CTCTTCCAAA  
GATAGATAAA TAAGACAGCA GATATACTAA GGAATAACCT CACCAACTTG TCATTGACTG ACATGATTTC TTTTGGCCCA  
CTTGGCCAGC TAGTCTGGTT TGGTTTTCTG GAAATGAAAG AAATAATCAG AGTTAATGA CAGAGAGCGT GAGACCCAGA  
AAGACAAAAG TAGATGAGGT AAGTCTCTTG AGCGAGACTT CTAGGGATGG GAAATTTGTG GTGATTGATA TGAATGATT  
TTTCCCTTAT CAGGTTCAG AGGATCGTGT TTATGAAGAA TTAACATAT ATTCACTAC TTACAGTGAG TTGGAAGACC  
CAGGGGAAAT GTCTCCTCCC ATTGATTAT AAGAATCAG TGTCCAGAAC ACTCTGATT ACAGCCAAGG ATCCAGAAGG  
CCAAGGTTTT GTTAAGGGGC TACTGGAAAA ATTTCTATTC TCTCCACAGC CTGCTGGTTT TACATTAGAT TTATTCGCT  
GATAAGAATA TTTTGTCTCT GCTGCTTCTG TCCACCTTAA TATGCTCCTT CTATTTGTAG ATATGATAGA CTCCTATTTT  
TCTTGTTTTA TATTATGACC ACACACATCT CTGCTGGAAG GTCAACATGT AGTAAGCAAG ATTTAACTGT TTGATTATAA  
CTGTGCAAAAT ACAGAAAAAA AGAAGGCTGG CTGAAAGTTG AGTTAAACTT TGACAGTTTG ATAATATTTG GTTCTTAGGG  
TTTTTTTTTT TTTTAGCATT CTTAATAGTT ACAGTTGGGC ATGATTTGTA CCATCCACCC ATACCCACAC AGTCACAGTC  
ACACACATAT ATGTATTACT TACACTATAT ATAACATAT ATGCAATAT TTTACCACCA GTCAATAATA CATTTTGGC  
AAGACATGAA GTTTTATAAA GATCTGTATA ATTGCCTGAA TCACAGCAC ATTCAGTGAC ATGATATTAT TTGCGAGTTG  
ACAAGTAGGA AGTGGGGAAC TTTTATTAAG TTACTCGTTG TCTGGGGAGG TAAATAGGTT AAAAAACAGG AAATTATAAG  
TGCAGAGATT AACATTCAC AAATGTTTAG TGAACATTT GTGAAAAAAG AAGACTAAAT TAAGACCTGA GCTGAAATAA  
AGTGACGTGG AAATGGAAAT AATGTTTATA TCTAAACAT GTAGAAAAAG AGTAACCTGT AGATTTTGT TACAAATTA  
AGAATAAAGT TAGACAAGCA ACTGGTTGAC TAATACATTA AGCGTTTGAG TCTAAGATGA AAGGAGAACA CTGGTTATGT  
TGATAGAATG ATAAAAAGGG TCGGGCGCGG AGGCTCAGC CTGTAATCCC AGCCTTTGG GAGGCGGAGG TGGGCAGATC  
ACGAAGTCAG TAGTTTGAGA CCAGCTGGC CAACATAGT AAACCCGTC TCTACTAAAA ATACAAAAAA AAAATTAGCT  
GGGTGTGGTG GCAGTCACCT GTAGTCCCAG CTACTTGGGA GGATGAGGCA GGAGAATCGC TTGAACCTGG GAGGCGGAGG  
TTGCAGTGAG CCGAGATCGC ACCAGTGCAC TCCAGCCTTG GTGACAATGG GAGACTCCAT CTCAAAAAAA AAAAAAATA  
AAAAAAGATA AAAAGTCAGA AATCTGAAAA GTGGAGGAAG AGTACAAATA GACCTAAAT AAGTCTCATT TTTTGGCTTT  
GATTTTGGGG AGACAAAGGG AAATGCAGCC ATAGAGGGCC TGATGACATC CAATACATGA GTTCTGGTAA AGATAAAAT  
TGATACACGG TTTGGTGTCA TTATAAGAGA AATCATTATT AAATGAAGCA AGTTAACTAT CTAAGAGAAT TATTTGAGA  
TAGAAGTGAA GCTAAGCTAA ACTTCACATG CTCTAATTTG GAGGGAATAA CTAAGGATAA ATGAAATAAT TACATTTTAT  
ATAATTAGTC ATAAACATGC ATTGTGAAAC TGTAGAGAGC AGGTAGCCCA AAATAGAGAA AGATTAGATA AAGAGAAAT  
AAGTATCCAT CAGAGACAGT ATCTCTAGGC TTGGGCAAGA GAAAAGTCCA CAGTGATAAG CAATCCACC TAAGGCATGA  
ATATGCGGCA GAGAAAAACAG CAATAGTGAA TGAATGCAAA AGGTGCTGAG CAAATTCAC ACATGAGTAT TGTGCATGAG  
TAAATGAATA AAACATTTGC AAAGACCTTT AGAGAAAGAG AATGGGAGCA TATGTGCGAA ATAAGATAGT TGATTATGAA  
TAGAAGGTAG TGAAGAAAAG CAAGCTAAGA AAAAATTCTG TTTATAAAG AAGGAAAAGA TAGTTTATGT TTTTAGCCTA  
AGTATAAGAG TCCTACAGAT GGACTGAAAA AAATCAGTCT GAGAGTATTA GTCACAATTA ATGAAATAAT TACATTTTAT  
GTATTGAGGA TGCCAAGATT AAAAGGTGAC AGGTAGATGT TAATTTCCCT AGATTGTGAA AGTGATCACG ACAATCACAC  
AACAAATAAT TAAGTGACTT GGTATGCTTT ATTTAATTGT AGGGCCTGAG GTTTTCCATT CTCATTTTTC TAAATACAA  
TTTTGTTTCT CCAAATTTGA CAGCAGAATA AAAACCTTAC CTTTCTACTG TGATCATGC TAAGCTGCAT CTCTACTCTT  
GATCATCTGT AGGTATTAAT CACATCACTT CCATGGCATG GATGTTTACA TACAGACTCT TAACCCTGGT TTACCAGGAC  
CTCTAGGAGT GGATCCAATC TATATCTTTA CAGTTGTATA GTATATGATA TCTCTTTTAT TTCACTCAAT TTATATTTT  
ATCATGTACT ACATATTTCT TATACACAA CACAAATTTA TGAATTTTCT CTCAAGATCA TTTGAGAGT TGCCCTCCAC  
TACCTGCCTT TTATAGTACG CCCACCTCAG GCAGACACAG AGCACAATGC TGGGGTTCTC TTCACACTAT CACTGCCCA  
AATTGTCTTT CTAAATTTCA ACTTCAATGT CATCTTCTCC ATGAAGACCA CTGAATGAAC ACCTTTTCAT CCAGCCTTAA  
TTTCTTGCTC CATAACTACT CTATCCAGG ATGCAGTATT GTATCATTAA TTATTAGTGT GCTTGTGACC TCCTTATGTA  
TTCTCAATTA CTTGTATTTG TGCAATAAAT TGAATAATG TAACTTGATT TCTTATCTGT GTTTGTGTTG GCATGCAAGA  
TTTAGGTACT TATCAAGATA ATGGGGAATT AAGGCATCAA TAAATGATG CCAAAGACCA AGAGCAGTTT CTGAAGTCCT  
CCTTTTCTAC AGCTCTTTAT CAAACAGAAC ACTCTATAA CAACCCATAG CCAGAAAACA GGATGTAGGA ACAATCACCA  
GCACACTCTA TAAACAACCC ATAGCCAGAA AACAGAAATG AAGGCATAATC ACCAGCCATC TTTTGTCAAT AATTGATGGA  
ATAGAGTTGA AAGGAACTGG AGCATGAGTC ATATTGACC AGTCAGTCTT CACTCTTATT TACTTGCTAT GTAACTTGA  
GAAAGCTTTT TTCTCTTTGT GAACCTCAGG TTTTACATCT GAAAATGAGA AATTGGAAC AAAAGATTCC TAACTGGTCT  
TTCTGTTCCC ATATTCTGTG ATTTTCAAT ATTTAGGATT TTTGGTAATC ACAATTACTT AGTTTGTGGT TGAGATAGCA  
ACACGAATCA GAACTATTTG GTGGACATAT TTTCAAAGGA GTAGCTCTCC ACTTTGGGTA AAGAAGTGA GCNGGTGCTG  
GTGGCTCAGC CTTGTAATCC CAGCACTTTA GGGAGGCCAA GGCGGGTGGA TCACGAGGTG AGGAGATCGA GACCATCTG  
GTTAAACAGG TGAACCCCG TCTTACTAA AAAATACAAA AAATTGACCA GGCGGTGGTG CGGCGCTCTG TAGTCCCAG  
TACTCGGGAG GCTGAGGCAG GAGAATGGCA TGAACCAGGG AGGCGGAGCT TGCCGTGAGC CGAGATAGCG CCACTGCAGT  
CCCTCCTGGG CAAAAGAGCA AGACTGCGTC TCAAAAAAAA AAAAAAAGAA GTGTGTGGAG  
TAGCAGGACA CTTGCAACAA TAATATTTT CTAAATCCCT CTGAAAAATG CTAATCAAAG GGTTTTTTTC CTAATAATTG  
TCTTAGAAAT AAAATTTCCC CTTTGGGAGA CCGAGGCTGG CAGATCACGA GGTGAGGAGA TAGAGACCAC GGTGAAACCC  
CGTCTTACT AAAAATACTA AAAATTAGCC GGGGNGTGGT GGTGGGTACA CTGTAGTCC CAGCTACTTG GAGGCTGAGG  
CTGGAGAATC ACGTGAAC-3' (FRAG. NO: )(SEQ. ID NO:2505)

5'-AACAAAGAAAA GCGTTGGTAG CTCTGGTGAA TCCCAAAAGA ATGTGGCAGT TGCTAGCCAT GCTCCTGAAT  
ATGTATAAC AGTACATCAT ATGACTAAGA GTTTGACTTA GGGGTAGAT TTTATGTGT TGAACCCCAA ATAGTTATT  
TAATAGTTGG CACCCCAAAA CAAGTTACTT AACCTCACTA AGGTTCACTT TTCCTGTTA TAAAATGTAG ATAGTGATAG  
TATGTACTTT ATAGGATTAT TGTGAAAAAT AAATGAAATA TCAGATTTAT TTAGGATAAC ACCTGGCATA TGTGTTGGTAT  
TCAGAATTAG TTGCTGCTGT TTTATTCTGC TCTCCCTGTC ATCCCACTTT TCTAAGTTGT AAATAAATA GTTGACACA  
GATTGACAGA TTAAGAAAGG CTTGTGATTG TGCTAGACCT ATGCCTATGC CTCTGTCTCA CCAGATTCCA GGTGTATATG  
TGGAGGTGGG ATAGGGAGTG GAGTAAGTGG GTAAATATTA AATTGCCAG TTGGGCACCA TCCTGAATAT TATCTCTAAA  
GAAAGAAGCA AAACCAGGCA CAGCTGATGG GTTAACCAGA TATGATACAG AAAACATTTT CTCTGCTTT TTGGTTTAA  
GCCTATATTT GAAGCCTTAG ATCTCTCCAG CACAGTAAGC ACCAGGAGTC CATGAAGAAG ATG-3' (FRAG. NO: ) (SEQ. ID  
NO:2500)

5'-GATCTTCATG TGGAATGACT GGTTCATT C AATAGACTTA ATTCAGCAGT CTGTGGGGAA GAGCAAGGTA  
TGATAGAATG GTTCCTCAAG TGCTTCAGAT GTGAAGTGGG TTTAAATATA CTGTCCCTGT CTCTTCAGA GTTTTGGTAA  
AGATAAATA GGACACTCAT TAAAAAGCAA TCTTTGCAAA TGACAAGCCA CTATAGACAT TAATAGAGTT TTCATTTC  
GTATTATCAT TAATATCAGA TCCTGGAAGA AGGTTGAGCC TTGACCTAGA GCAAAAAAAC AGAAGAATTA GTAAAGGAAT  
CCTGGAGAAA GCCCTGCTG TGTATTTAAA GGAGAAAGGG AGATCATGTT GGGAAATTAT AATATTAATA GTAAACAAAA  
GCTAGGAAGT AAAATAAAAT AAATTATATG GCCTAGATCC CCATAAGTAA TGGTTAACT TCTGCCTTCC TGTGTCTGA  
GCCAGATTAG GGCACAGTAG AGAAAGAGGA GTCTCTGAAA ATGTTTCCAA TTTCGCTGGT CAGACAGCGG ATCATCAGTG  
AATCAGATGA AAATTTGTGG ATTTATGCAC TAACTGATCA GCAGGAAATT AAACAAGAAA AGCGTTGGTA GCTCTGGTGA  
ATCCCAAAAG AATTTGGCAG TTGCTAGCCA TGCTCCTGAA TATGTATAAA CAGTACATCA TATGACTAAG AGTTTGACTT  
AGGGGTIAGA TTTTATGTGT TTGAACCCCA AATTAGTTAT TTAATAGTTG GCACCCCAAA ACAAGTTACT TAACCTCACT  
AAGATTCACT TTTCTGTTT ATAAATGTA GATAGTGATA GTATGTACTT TATAGGATTA TTGTAAAAA TAAATGAAAT  
ATCAGATTTA TTAGGATAA CACCTGGCAT ATGTTTGGTA TTCAGTAATT AGTTGCTGCT GTTTTATTCT GCTCTCCCTT  
GCATCCCACT TTTCTAAGTT GTAAACTAAA TAGTTGTACA CAGATTGACA GATTAAGAAA GGCTGTGAT TGTGCTAGAC  
CTATGCCTCT CTCTCACCAG ATTCCAGGTG TATATGTGGA GGTGGGATAG GGAGTGGAGT AAGTGGGTAA ATATTAAAT  
GCCAGTTGG GCACCATCCT GAATATTATC TCTAAAGAAA GAAGCAAAAC CAGGCACAGC TGATGGGTAA ACCAGATATG  
ATACAGAAAA CATTTCTTC TGCTTTTGG TTTAAGCCT ATATTGAAAG CCTAGATCT CTCCAGCACA GTAAGCACCA  
GGAGTCCATG AAGAAGATGG CTCCTGCCAT GGAATCCCCT ACTCTACTGT GTGTAGCCTT ACTGTTCTTC GGTAAAGTAGA  
GATTCAATTA CCCCTCCCAG GGAGGCCCAA ATGAATTTGG GGAGCAGCTG GGTAGGAAC CTTACTGTG GGTGGTGACT  
TTTTCTAGGA CATGTGCAAA CTATTGGGCA TTTCCAGGG ACTCTGTAGT GGAGCCAAGC TAGAAAGCAG AGGCAAGTGG  
GCTGAGCAAC ACCTAAGGAG GAAGCCAGAC TGAAAGCTTG GTTCCTTGCA TTTGCTCTGG CATCTTCCAG AGTGCAAAAT  
TCCTACCAAG GTAATGAGGG TAGAGGAGAG AAAGAAGCTC TTTCTCCCC TGATTCTCAT TCCTGAAAAG ACGGTGGTTC  
CTTAAATTC CATGGATGTA GATCTTATCC CCACACCCAG ATTCTAGTCC TCTGGAGATA AAGAAGACTG CTGGACACTA  
ATGTATCCTC TCTGGACTTT TGCAGCTCCA GATGGCGTGT TAGCAGGTGA GTCCTCTGTT CTGTCTCCCT TGGTGTATCA  
ACATGTCTGG GCATTGCTTT CCTCTCACTA TTTCTTCGT CCCATCACTT CTGCTTTCTA ATGAGCATGA ATCTGTCTCT  
TGGCCAGACT ACTTCCCTC TCCACCTGTC CTGTCTTTT TTTTCTTCCC TGATTCACTG CATTCTCTCA AGTCATTCTC  
TCCTCTGTT TAGTCAATAA CCATGTCTGT TGCACATATA CATGTCTCAT TCTCTCTCT AGACACTTTG GCATGATCTC  
GCTCAATAAT TACATTATTA TTATTATTGC CATTTTATAA TTGAGGATGC TGAAACTCAG TGATTTTCTG GTGGTTACAT  
GGCTAAGGAA CTGGATTICA ACGTAAGTTC CTGGATCTA AGTCCAGTTC TCTTCTGACT ATATCACCTT TTTGTTATCA  
CCATGTATCT ACTTCTTTGG TCTCTGTICA AATTTGCACT ACATCCCCTT GTTCCAGGAA GCCATTCAAG ACTGACTTTC  
TTAGTGCCTC TCACTACTTT CTGGAAGTGA CATATGTTT TCACTCTGTA TATACTTACA ATTAATAGT CATAAATATT  
CAGAGCTGG AGAAACCTTA TATTCATCC AGTCCAGTAA ATTTATCCAT CCATAATTCA CTCATTCATT CACATAATAA  
ATATTTAATG TAACAATGGT TGAACATGGC AGACAGTGT TCTACCTCAA AAGAGATTGC AGTCCTCATT TACAGATACT  
GAATTGAAAT TAACAGAAGT AGAGTGAGTC AGCTCAAATC ACATAGTGAA TTGGTTTCTT TGTTTTTAAA TCTCTGCAT  
ATGTGCTCTG TCTTCTCCC TGTGTGGGC GTTCCCTGGG GCACCAATAC TAATTTCTCC TTCCCTAGA AATCAAAACA  
GGGTCTTATC ACCAACAGAA TAAGGACAGG TTGACCACTG ATTGTCAGAA TATTGCTTCG TTTGTACTTT TAAGCCTAGA  
CAGTTTCAA TGACTTTTT TCTCTCTACA TGCTTTTICA TATTTTATC TTCTGAAAGT CCCTCAGAAA CCTAAGGTCT  
CCTTGAACCC TCCATGGAAT AGAATATTTA AAGGAGAGAA TGTGACTCTT ACATGTAATG GGAACAATTT CTTTGAAGTC  
AGTTCCACCA AATGGTTCCA CAATGGCAGC CTTTCAAGAG AGACAAATTC AAGTTTGAAT ATTGTGAATG CCAAATTTGA  
AGACAGTGGG GAATACAAAT GTCAGCACCA ACAAGTTAAT GAGAGTGAAC CTGTGTACCT GGAAGTCTTC AGTGGTAAGT  
TCCAGGGATA TGGAATACA GATCTCTCAT GTGAGGGATG GCTCATCTGA AGATGGGAAA AAACAGGTTA TTCCAAGGGT  
TAGGACACCA GAGTGGGATT CAAGGCCTCT CATTTTAAAG ACCCTGTCAT TGGCTGGGCA CAGTGGCTCA CGCCTGTAAT  
CCCAGCACTT TGGGAGGCTG AGGCAGGTGG ATCAGGAGGT CAGGAGATCG AGACCATCCG GCTAACATGG TGAACCCCA  
TCTCTGCTAA AAAATATATA TATATAAAAT TAGCCGGGCG TAGTGGTGGG CACCTGTAGT CCCAGGTAAT CGGGAGGCTG  
AGGCAGGAGA ATGGTGTGAA CCCAGGAGGT GGAGGTTGCA GTGAGCTGAG ATCAGGCCAC TGCCCTCCAG CCTGGGCTAC  
AGAGCAAGAC TCCGTCTCAA AAAATAAATA AATAAATAA AAAGACCCCT GCATCTCTT TCTTCTACCC CCTTCCCTTT  
TGATTACTTG TATGCCTTCT TTCAATATTC TAGTCATCTC TCAATATTAT TCCTCCACCC TATTTTCTC TATCTTTCT  
GCCTAGATTC AGGTATATAT TATGTGGTCA AACAGCATGA CATATATGTG AACATTTCAA AGAGCTGTGT ATCTGGAATA  
GGATCAAAAG GTTTGACTTA AAGTTTGTCT CTGCATAATC CATATGGCAG GACCTGAATA TTAGGTTGTA CTCTCGTTA  
TGAACATAT CTGGGTACAT TTCTTATGT CCTCTGTTG TACTTAAGAA CACATATTTT ATGCTTGTIT CATTTTATC  
ACTCTACTG CCAACAAATA GCATAGCATG CTTAGGCACA TGTGGCTTAA TTAGCAAATG TTGAATAAAC AAATTAATGA  
TTTTGAATAG TGACCAATAG GTCTCTTTA TACTCTATAT TTTTCTCTG AGTGAAGAAA AATGTTTCAA CCTCCATAG

TAAATTCCAA ACACAACTA AAGCAATGTA GAATAGCTTC TTTATTCCTT GGAGTAGGTT CTAGAGAAGT CCTAAAGGAT  
TGGTCCTAAA TTAATTATGC TTATTATGCT AGCGATATTT CCTTCAAAA TTCTCCTTTA ATGAATGCTT TTTAATTTTT  
ACAAAAGCAT TAACCATAGA ATGTGATTCT TGTCTTTCAC TGACTCATTG GTGACAAATA TTTGTTGAGT ACCTACCAAC  
TCCTAAGTAT TGCTACCAAC TCCTAAATAC TGTGTTGGGC ATTCAGAATA GAATGTAGAA CTAGACAGGG TCCCTGACTT  
CTTGGAGCAC AGAGCAGTAT GGGAAAGAGGA CATTAAATAA AGAATTACAT AAGTAATTAA TTTAAATTAT ACATGTTTTG  
AAGAAGTTTT TTTTGGACAA CTATAATTAA CACTAGAATC GGGAAAGTTT TATAAGGTAA GAGAGGACAA AATAGACACT  
CTCCTAAGCT AAAATTCCTA AGAAAGACTG TTTATTTTCC CCTAACTAAC TAGAACTAGC AACAGAAGAT CTGAAAGGAA  
TTCTGGCTTT CAAGTGTTC ATGTATGGAC TCATCAGGGA GGTCCGAGAG GCTTTGTGGC CCCAGACTGA CTTTTCAGGA  
GGGGAAGGA TTTATCAATA CACAAGACAG GCTCTAAGCA TTATTTTGTG CCCTTTAAAA ATCCACTTTA TGAGCCAAAA  
AGTGAGTTAA TGATAATTCA TAGTTTCTGA CACATGCTCT ATGCGTGGCT CTCTTTTCTC TATTCATTCT CTCTCTCTC  
ATTTATTGTT AAATAAATAA TGTAATGAAT GTTCTTCAGA CTGGCTGCTC CTTCAGGCCT CTGCTGAGGT GGTGATGGAG  
GGCCAGCCCC TCTTCTCAG GTGCCATGGT TGGAGGAATC GGGATGTGTA CAAGGTGATC TATTATAAGG ATGGTGAAGC  
TCTCAAGTAC TGGTATGAGA ACCACAACAT CTCCATTACA AATGCCACAG TTGAAGACAG TGAACCTAC TACTGTACGG  
GCAAAGTGTG GCAGCTGGAC TATGAGTCTG AGCCCTCAA CATTACTGTA ATAAAAGGTG AGTTGGTAAA GGAAAGGAAA  
AGCATCCATA GCAGGGGAAG GAAGAGAGAA CTTCTGAGCC TGAGCAGTTG CAGCTTGTAG AAGGGGGGCA CCTGTGATAC  
ACTGGAAGC CTACCAGACT TGCAATGAGG AGACCTGGGT GATAGTATAT ATCTCAATCT CTGTTTCAAA GCCTTGACTT  
GTAAATGGT GATAGTAATA CCTGCTTGCA CTATGAAATT TTTATGAAGA TTAATGTGGT AATATTTGTG AAATGACTTT  
GTAAACTGTT AAGCACTACC CAAGCATAAC AGATTGTGAT TACTATTTTG ATCTCAAAGT CATCTGTTGC TCCTGGGGGA  
ACACTTATAT TTATCAAATT GAAAAAAGT TTCAAAGTTG AATGAAGAAA GGATATAAAG AGCTTGAGGA GCCCATTCOA  
GCTTAGGAGG GCTGGGAAAG GAAACCAGCA AGTCAGTAAG CTGTGTGCTT GTGTATTGAG GGAGGAGGGA ATGGACTTGA  
TATGGAGAGG GTAGGGAGGT GGAATGCTC TATGGCTGT AAGAAAACT GCTCTCTCCA AACTCTTTAT AAGAGAGGGA  
GCCTGTGAAG TATTCATTTT TGAAGGAGAA AGTTAGACTT TTCCTCACA CACTTTGTAC ATAATAATGT TAAAAAAGC  
ATGAGGTCAA AATACATAAT TAAGTCTAG CAGTTCTCTG TTAATAATT TGAGACTGAA GTGCTATGTA CTGTCTCTA  
GGCTTCCAGT ATCTTCATCT GTAAACAGA ATATTGGTC TAGATCCAT TAGAATCATT TGATACTTA AAAATATAT  
TGATGCTCAT GTCTCATTTT TTGAGATTCT GATTTAATTG GTTTGGGGTG CAGCTGGGT ATACGTATTT TTCATAGGTC  
TTTCACATAA TGTAATGGG TAGCCAATAT TGAGAATCAC TTGTCTAGGT GATCTTAAA TGATTTCTGG ATGTAATATT  
CTGAGGCTCT ATAATTTGAG ACTAATCACA AAAATCGGTA CAGTTTATAA ACAGACTAAC AGAACCACAA AATAATAGAA  
TTGGAAGGCA ATTTAACTAG TGCAATTTCT TCATTTTGCC TAACAGGCAT GTAAGAAATG ATGATTGATT GAGTAATAGG  
CATTGATGAC CCCTGTCTC ACTTTGTCCC CTTCCACCC CTTAATTATA TGTGAATTCT GGTCTGTGCA TTTCGAATAA  
GGGGTTTATC TTTCTATTG TCTTCCCTC TGGGCACGGC AACTGGCTA CTGGAGTTAA GAGGAAATGC TTAGGACTCC  
CTGTGGCTCC AGGGAGCACC AACAGAGCAA CTCAACCTAG TGTTAATCTG AGTGTTTTCT CTGTGCTTCT GGATGCCACA  
TCACGCTAAA AATGAAGGAC AAAGCTTGGT CTTTCTCTTA GGGAGGATGA AACTCTGAAC CTCATTTTTC AGTTCCCAAG  
ATGAATTATG TTTCTCATG CATCTGTGTT CCACTACAGC TCCGCTGAG AAGTACTGGC TACAATTTT TATCCCATG  
TTGGTGGTGA TTCTGTTTGC TGTGGACACA GGATTATTTA TCTCACTCA GCAGCAGGTC ACATTTCTCT TGAAGATTAA  
GAGAACCAGG AAAGGCTTCA GACTTCTGAA CCCACATCCT AAGCCAAACC CCAAAAACAA CTGATATAAT TACTCAAGAA  
ATATTGCAA CATTAGTTTT TTCCAGCAT CAGCAATTGC TACTCAATTG TCAAACACAG CTGCAATAT ACATAGAAAC  
GTCTGTGCTC AAGGATTTAT AGAAATGCTT CATTAACTG AGTGAACTG GTTAAGTGGC ATGTAATAGT AAGTGCTCAA  
TTAATATTGG TTGAATAAAT GAGAGAATGA ATAGATTATC TTATTAGCAT TTGTAAAAGA GATGTTCAAT TTCAATAAAA  
TAAATATAAA ACCATGTAAC AGAATGCTC TGAGTATTCA AGGCTTGCTA GTTTGTTTGT TTGTTTCTA CTAAAGGCAA  
GGACCATGAA GTTCTAGATT GGAAATGTCC TCTTTGACT ATTGCAAGTG CGATCTAGGA ATGAAAAGAC ATAGGAGGAT  
GCCAGTGAGG TGGATCATTT TTATGCTTCT TCTTCAGCTT ACTAAATATG AACTTTGAGT TCTTGGCAGA ATCAGGGACA  
GTCTCAAGAC ATAGGACTCT CAGGATGAAG TAGAGTCCAG GATTCCTCTG TGATTGTTTT GCCCCTCCCA AATTTATATC  
TTGAATTAT GTCTTGATC TTTATACAGC ACCTGAACCA AGCATTTTGG AGAAATTCOA GCTAATAATA ATAACCAAAA  
CCTTCGGCTC TGAAAACAGT CCAGGACTGA ATAAGATCTT GGGCAAAAGA ACTAGACAGT TTTGGTTTAT TTTCCCTTC  
ATTTTATGTC TTCATCATAG TCATTGGAGG CTCATTCTC TTGTATGGA GTAAATGGGA TTAAGTTTC-3' (FRAG.  
NO: ) (SEQ. ID NO:2501)

5'-TACTAAGAGT CTCCAGCATC CTCCACCTGT CTACCACCGA GCATGGGCCT ATATTGGAAG CCTTAGATCT CTCCAGCACA  
GTAAGCACCA GGAGTCCATG AAGAAGATGG CTCCTGCCAT GGAATCCCCT ACTCTACTGT GTGTAGCCTT ACTGTTCTTC  
GCTCCAGATG GCGTGTAGC AGTCCCTCAG AAACCTAAGG TCTCCTTGAA CCTCCATGG AATAGAATAT TTAAGGGA  
GAATGTGACT CTACATGTA ATGGGAACAA TTTCTTGAA GTCAGTTCCA CCAAATGGT CCACAATGGC AGCCTTCAG  
AAGAGACAAA TTCAAGTTTG AATATTGTGA ATGCCAAAT TGAAGACAGT GGAGAATACA AATGTCAGCA CCAACAAGTT  
AATGAGAGTG AACCTGTGTA CCTGGAAGTC TCAGTGAATC GGCTGCTCT TCAGGCCTCT GCTGAGGTGG TGATGGAGGG  
CCAGCCCCTC TTCTCAGGT GCCATGGTTG GAGGAAGTGG GATGTGTACA AGGTGATCTA TTATAAGGAT GGTGAAGCTC  
TCAAGTACTG GTATGAGAAC CACAACATCT CCATTACAAA TGCCACAGTT GAAGACAGTG GAACCTACTA CTGTACGGGC  
AAAGTGTGGC AGCTGGACTA TGAGTCTGAG CCCCTCAACA TTAAGTAAAT AAAAGCTCCG CGTGAGAAGT ACTGGCTACA  
ATTTTATC CCATTGTGG TGGTGATTCT GTTTGCTGTG GACACAGGAT TATTTATCTC AACTCAGCAG CAGGTACAT  
TTCTCTGAA GATTAAGAGA ACCAGGAAAG GCTTCAGACT TCTGAACCCA CATCCTAAGC CAAACCCCAA AAACAACCTGA  
TATAATTACT CAAGAAATAT TTGCAACATT AGTTTTTTC CAGCATCAGC AATTGCTACT CAATTGTCAA ACACAGCTTG  
CAATATACAT AGAAACGTCT GTGCTCAAGG ATTTATAGAA ATGCTTCATT AAAGTGAAGT AAAGTGGTGA AGTGGCATGT  
AATAGTAAGT GCTCAATTAA CATTGGTTGA ATAAATGAGA GAATGAATAG ATTCATTTAT TAGCATTTGT AAAAGAGATG  
TTCAATTCA ATAAATAAAA TATAAACCA TGTAACAGAA TGCTTCTGAG TAAAAAATAA AAAAAAATAA AAAAAAATAA



3' (FRAG. NO: ) (SEQ. ID NO:2502)

5'-TCTCAATATA ATAATATCTT TTATTCCTGG ACAGCTCGGT TAATGAAAAA ATGGACACAG AAAGTAATAG  
GAGAGCAAA CTGTCTCTCC CACAGGAGCC TTCCAGTGTG CCTGCATTGG AAGTCTTGGG AATATCTCCC CAGGAAGTAT  
CTTCAGGCAG ACTATTGAAG TCGGCCTCAT CCCACCATT GCATACATGG CTGACAGTTT TGAAGAAAAA GCAGGAGTTT  
CTGGGGGTAA CACAAATTCT GACTGCTATG ATATGCCTTT GTTTTGAAC AGTTGTCTGC TCTGTACTTG ATATTTCACA  
CATTGAGGGA GACATTTTTT CATCATTTAA AGCAGGTTAT CCATTCTGGG GAGCCATATT TTTTCTATT TCTGGAATGT  
TGTCATTTAT ATCTGAAAGG AGAAATGCAA CATATCTGGT GAGAGGAAGC CTGGGAGCAA AACTGCCAG CAGCATAGCT  
GGGGGAACCG GAATTACCAT CCTGATCATC AACCTGAAGA AGAGCTTGGC CTATATCCAC ATCCACAGT GCCAGAAATT  
TTTTGAGACC AAGTGCTTTA TGGCTTCCTT TTCCACTGAA ATTGTAGTGA TGATGCTGTT TCTCACCATT CTGGGACTTG  
GTAGTGCTGT GTCACACACA ATCTGTGGAG CTGGGAAGA ACTCAAAGGA AACAAGGTT CAGAGGATCG TGTATTGAA  
GAATTAACA TATATTCAGC TACTTACAGT GAGTTGGAAG ACCCAGGGGA AATGTCTCT CCCATTGATT TATAAGAATC  
ACGTGTCCAG AACACTCTGA TTCACAGCCA AGGATCCAGA AGGCCAAGGT CTTGTTAAGG GGCTACTGGA AAAATTTCTA  
TTCTCTCCAC AGCCTGCTGG TTTT-3' (FRAG. NO: ) (SEQ. ID NO: 2503)

5'-AAGCTTTTCA AAGGTGCAAT TGGATAACTT CTGCCATGAG AAATGGCTGA ATTGGGACAC AAGTGGGGAC  
AATTCCAGAA GAAGGGCACA TCTCTTCTT TTCTGCAGTT CTCTCTCACC TTCTCAACTC CTAATAAAAT GTCTCATTTT  
CAGGTTCTGT AAATCCTGCT AGTCTCAGGC AAAATTATGC TCCAGGAGTC TCAAATTTTC TTATTTTATA TTAGTCTTTA  
TTTAGTAGAC TTCTCAATTT TTCTATTTCAT CACAAGTAAA AGCCTGTTGA TCTTAATCAG CCAAGAACT ATCTGTCTG  
GCAAATGACT TATGTATAAA GAGAATCATC AATGTCATGA GGTAACCCAT TTCAACTGCC TATTCAGAGC ATGCAGTAA  
AGGAAATCCA CCAAGTCTCA ATATAATAAT ATTCTTTATT CCTGGACAGC TCGGTTAATG AAAAAATGGA CACAGAAAGT  
AATAGGAGAG CAAATCTTGC TCTCCACAG GAGCCTTCCA GGTAGGTACA AGGTATTATT TTTTCTACC CTCAGTCACT  
TGTGGCAGGG GAAGTCATAG TCACGGTGCT TAGGAGATGA AACTTTATTG ATTTAGGCAT GGATCCATCT AGTTTAATTA  
ATATATTGGG TAGAGGAAG CTACTTGCTG TACTTTCCAT TGTTGCTCT CTCCCTGGAG AGGAACATTT TTACTCAGCT  
TGCAAATCGG AAATAGATTT TCTCACATTA GAAGTCAATT TTCTGGGTAT GAGACAGGAG AGTTCATACT GTGTATGTAG  
ATCTCTGGCT TCTGGGTCTG ACATGTGCTG AGGGACACAT ATCCTTCACA CATGCTTTTA TAAATCTGT ATAAAGTAA  
CTGCTTCTG ATTGGTCTTT ATAATCCATA AGCTGTGGGA TGCTTCTCTG AAGATGAAAA TAGTAATAGA GTCCCATCTA  
GCTATTCAA GCCATTCTT CATTGTATTC TGTGCACATG AAGTTGGGGT TTGTTACTGA CAAAATATAT TCAGATACAT  
TTCTATGTTA AAAGGATTGT GAGATGCATA GGTAAATGTG TTTATTTTCA GTTTTACTTG TCAACATAGA TGAATGAGAA  
AGAACTTGAA AGTAACACTG GATTAAGAAT AGGAAATTT GGCATGGATT TTGCTCCATT TTGCTCCATC TAATCACTTG  
GATAGTGTTC AGGTGTTCTT GGTCAAGTAC TTGAATGCTC TGAGCTTTAG TTCTTGGTG ATTACAATGA AGATTGAA  
TACAGGATGG CTTTGAAGAAA ATAAACAAAA CTCCCTTTC TGTCTGTGCA GAATGTGCA CAGGGAGTTA CAGAATGTTT  
TCATGACTGA ATTGCTTTTA AATTTACAG TGTGCTGCA TTTGAAGTCT TGGAAATATC TCCCAGGAA GTATCTTCAG  
GCAGACTATT GAAGTCGGCC TCATCCCCAC CACTGCATAC ATGGCTGACA GTTTTGAAGAA AAGAGCAGGA GTTCTGGGG  
GTGAGTGAGC CTCTCCAAC TTTGACTAGA GTAAGGGTTG GGTCTAGAAA AGAATATTGA GTTGCATCAA CTGTTTTCCC  
ACTTGGATT CTAGAGGTTG TTAGGTCCTT TAAAAACAT GGTAGATAAA GAGTTGACAC TAACTGGGTC CTTTGGGAA  
GAGCCAGAAG CATTTCCTCA TAAAGACTTT AAATGCTAG GACGAGAATG GCCAACAGGA GTGAAGGATT CATACTTTA  
TCTTTACTTA GATGTAAAGA ACAATTACTG ATGTTCAACA TGAATACATA CATAAAGGCG CATGGAGAAA AGTATTGGCC  
TTCCATGCAT TAGGTAGTGC TTGTATCAAT TCTTATAGTG GCTAGGGTAT CCTGGAAAAT CTTACGTGTG GATCATTCT  
CAGGACAGTC TAGGACACTA ACGCAGTTTC TCATGTTTGG CTTCTATTAT TAAAAATGA TACAATCTCG GAAAAATTTT  
TTTGATTTTC ATGAAATTCA TGTGTTTTTC TATAGGTAAC ACAAATCTG ACTGCTATGA TATGCCTTTG TTTTGAACA  
GTTGTCTGCT CTGTACTTGA TATTTACAC ATTGAGGGAG ACATTTTTTC ATCATTTAAA GCAGGTTATC CATTCTGGGG  
AGCCATATTT GTGAGTATAT ATCTATAATT GTTTCTGAAA TAACACTGAA CATAGGTTTT TCTCTTCTC AGATCTAACC  
AGTTGTTTAT TCCCAGTATT AAGATGATAT TTATAATTCT TAATTATAAA TATATGTGAG CATATATATC ATAGATATGC  
TCATTAACAA CAACAAAAGA TTCTTTTAC AATTAACGGT GGGTTAAACA TTTAGCCAC AGTTTTATCC CATGAGAAAC  
CTGAATCTAA TACAAGTTAA ATGACTTGCC TAAGGGCCAC TTGACTAATA GTAATTGAAC CTAACTTTC AGAATCCAAC  
TCCAGGAACA TACTTCTAGC ACTATTCATC AATAAAGTTA TATGATAAAT ACATACAATC TTATCTGTCA ACTAAAAATA  
ACAACAGAGG CTGGCATGG TGGCTCACAC CCGTAATCCC AGCATTCTGG GAGGCTGAGG CAGGTGGATC ACCTGAGGTC  
AGGAGTTTGA GACCAGCTG ACCAACATGG TGAACCTCA TCTCTACTAA ATATAAAAA TTAGCTGAGT GTGATAGTGC  
ATACCTGTAA TCCAGTACT TAAGAGGCTG AGGCAGGAGG CTTGTTTGA CTTGGAAGGC AGAGGTTGCA GTGAGCTGAG  
ATTGTGCCAT TGCACTCCAG CCTGGGCAAT AAGTGCGAAC TCTGTCTCAA AATAATAATA ATAATAATAG AAAATAAAGT  
TGTCTTCATG AAAAATGAGG AAAGAGATTG CTGGGGTGAG AAACATTAAG ATCAATGGGC ATATGGTGAC CTCTATGCC  
CTAGAACTC TTTTANGGTA TTTTCTCCTG GTATCTCTT TACNCATCGT TCTATCTGGA AAAATAGGTG GATGAGTGAG  
ATAATAACGG TATATACTTT TTAAGGTCT AATTGACATA TATAAATTGC AAGTATTTCA GATGTCAATT TGCTAACCTT  
GACACACATA GACACACATG AAAACATCAC CACATTAATA CAATGTATGT ATCCATCATT CCAAAAGCTT CCCTGTGTAT  
CTTTGTAAT CTTTCTTCT CCTCCACTC CTGTCTCT CTGTCCCAAG AAAACATTGA TCTGCTTCT GTGAATATAA  
ATTAACCTAC ATTTTITAGA GCTTTATATA AGTATGTTCT CTTTACTGTT TGTCTTCTT CGCTGCACAG TTATTTTGAG  
ATTCTTCAAG TTTTCTCTT ATATCGATAC TTCAATCACA AGAATATATT TTAATCTAG ACTATGTCAC ATTGACTTTG  
TCGTCTGCTA AATCCTTAGT GCTCAGATGA CTGTTCAGG ACTCTCTTG AACCTGTACC TCTGTTANAT TGAACTTGT  
CTTACTGCTA TTTTATTTT AAACACAGCT TATTAGGTGT CTCTCAACCC ATCAAACNCA CAATCTGAGT CTTAGGAGA  
TTGCTTGA TTTGTGCTAT TGACTTATAT NTATNAAA TNGTAAATG TTTGGTAAAA ATATCATCAT GTACNTTTT  
ATAATTACGC TATNTNCACA TGATATATGT CAGACTCTGG AAATATGCAT GCCACAGACA CGTGTCTTCT GCCTAAAGGG  
GCTGATGGAA GACNCACATA CNAATAGACG ATTGCAGTAG AATGAGAGTG GTGGTCTAAN CAGTACATGT CCTGATGTTG  
CTCGGACAGT TACTACNCCA AGAGTACCCC CTGCATTGTC AGGGTAGCA TCTCTGGAA GCCTCATGTA AATGAAGAAT  
TTATGCTCC ATCCAGGACC TAATGAATAA GAATCTGCAT TTAGCAAGA CCTCATATG ATTATATAC ACTTTTTTTT  
TTTTTTTTT GATGGAGTCT CACTCTGTG GCCCAGGCTG GAGTGCAATG GCATGATCTT GGCTCACTGC AACCTCTGCC  
TCCCAGGTTT AAGTGATTCT CTGTCTCAG CCTCCTATG AGCTGGGACT ACAGGTGCAT GCCACAGTG CTGGCTAATT  
TTTGATTTT TAGTAGAGAC AGGGTTTAC CATTTTGCT AGCTGGTCT TGAACCTATG ACCTCCGGT ATTCCTCCG  
CTCGGCTTCC CAAAGTGCTG GGATTACAGA CATGAGCCAC CACACCCGCC TTATTCTGAT ACNCAATTA TTTGAGAA  
CACTCTATAG AAAATAAGAA TAAGAAAAA TTTGGCTCAC AGGTGACATT AATAAGTAAC TTTATCGAGT ACCCAAAAT  
TTACCTATGT TTGGAAGATG GGGTTAAAAG GACACATTGA AAACAAGAAC TCATTGTGGC TTTTTTTTCC TCTTTTTGA

ACAGTTTTCT ATTTCTGGAA TGTGTCAAT TATATCTGAA AGGAGAAATG CAACATATCT GGTGAGTTGC CCGTTTCTGT  
CTTTGTCCAT CCTTGAAAAG ATAAGAAGAA CAGAGTTTAA AGAGTCTTAA GGGAAACACA TCTTTGTCTC CTATATTACT  
TGTGAATGTG GATATATGAT TTTGTTTCAA TCTATTTTGT GTCCTAAGGC TTTTGTCAAC AGAAGTTGGA TATATCATT  
GAAACATAAA TTGTACCATT TAACATACAT GAAGTTTATG TTTACCTTGA CGTTCTTCTA AAAAGTGTCC TACACCGGCA  
TTGTCCTTGT AGGCATATTC ACATGATCAA ATAAAATAAT TAGTTTTCAA TTAAGGAGAA TATTGAGGA AAGACCGTAC  
GTGTTTCATGT GGTTCCTGAA GGCAGTCCAG TGAGAAAGTA ATATATGCTT CATTAAACAA TGCGGACATT TTCAGGGTTT  
CCCTTTTTAA CCAAAATTTG GAAGCAATGT GGAATTTACT GGATGCATCC AGCCCTGAAA TGAAGATAGG TTTATTGAAT  
GTGCCAGCAA GTGCAGGCC AGGTCTGAGT GTTCTTCATT ATTATCAGGT GAGAGGAAGC CTGGGAGCAA AACTGCCAG  
CAGCATAGCT GGGGGAACCG GAATTACCAT CCTGATCATC AACCTGAAGA AGAGCTTGGC CTATATCCAC ATCCACAGTT  
GCCAGAAAT TTTTGAGACC AAGTGCTTTA TGGCTTCCTT TTCCACTGTA TGTATTTTTT TTTGTGTGGG AAGACTAAGA  
TTCTGGGTCC TAATGTAAGT AAGAAGCCCT CTCTCCTGT TCCATGAACA CCATCCTTTT CTGTAACCTC TATTACACAG  
TATAGTGGTT TGTAAGTTC ACACAGCCCA GGGAGATGCT GGCTGCCAC TCCCCTCAAC CCAGGCAAAT TCCCTGGGGT  
TAAAGTTATC TACTGCAAGT GACGATCTCT GGGTTTTCT GTGCCTGTGT TTTGTGTGT GTGTGTGTGT GTGTGTGTGT  
GTATGTGTCA CTTTAAAGG ACTGGTCAGA TGGTAGGGAG ATGAAAACAG GAGATGCTAT AAGAAAATAA ACTTTTGGGG  
CGAATACCAA TGTGACTCTT TTTGTTTGTG ATTTGTTGCT GTTCAATAGG AAATTGTAGT GATGATGCTG TTTCTACCA  
TTCTGGGACT TGGTAGTGCT GTGTCACTCA CAATCTGTGG AGCTGGGGAA GAACTCAAAG GAAACAAGGT AGATAGAAGC  
CCGATATAAA ATCTTGAATG ACAGGTAAAC GAATTGGAGC TTTATTCCTT AAAATATGGC CTGGGTTTTT TGAACATTTT  
CTTCCAGAAA ATAGTTTCTC CAAGTTTTAT TACTTTGGTT TACAAATCTC ACATTTAAAT CACATTTTAT ACCATAAGTA  
GCACACATT CATAATATTC CTCTGAATGA GGGTTGGGAT AATAGGACTG ATATGTTAGA AATGCCTTAA AGTGTGTGGA  
GCATGAGAGA TGGATGTACA GAAGGCTTGT GAGGAAACCA CCCAGGTATC TGGCCTTGT TTTGCCCCA GAACTAGCCG  
CCTATTCCTG TTTCTGTTTT ATCTCTTGT TCTTGACTT TTCCTTTCCA ACTTGCTCTA AAACCTCAGT TTTCTTCTC  
TTCTGATTC TACTACCAA ATGTTTTCAC TTGCCTCACC CGTCCATTAC ACCTTTGATA AGAACCACCA GACCTTGTGC  
TCATGACTTT GCCCATGTCT GATGGAAGAA ACATAGTCTC TCCATCTGTC CACTTCTCTG AGGCATTCAA GTCTAGCCAC  
CTTTTAAAT CACTCTCTC CAGGCTGGGC ACGGTGTAC GCCTGTAATC TCAGCACTTT GTGAGGCTGA GGAGGGCGGA  
TCACTTGAAG TCAGGAGTTC AAAACCAGCC TGGCCAAATG GCAAAACCAA ATCTTCTCA ATTATAACCA AATCTTAAAC  
CAATCTCTA CTAATAAATA CAACAAAACA AAACAACAAC AAAAAACA GAAAAGGAAA CATTAGCCCA GCGTGGTGGC  
AGGTACCTGA GGTTCAGAT ACTTGGGAGG CTGAAGCAGG AGAATCGCTT GAGCCCAAGA GATGGAGGT GCAGTGAGCC  
GAGATCATGC CACTGCACCA CAGCCAGGT GACAGAGCCA TACTCCAG CACATTGGGA GGCCAAAGCT GAAGAATAAT  
TTGAGGTGAG GATTGGAGA CCAGCCTGGC CAACATGGTG AAACCTCGTC TGTACTAAA ATATAAAAT TAGTGGGCA  
TGGGGGCA CACCTGTAAT TTCAGTACT TAGGAGGCTG AGGCAGGAGA ATTGCTTGA CCGGGAGGC GGAAGTTGCA  
GTGACCAAG ATCGTGGCCA CTGCACTCCA CCCTGGGTGA CATAGTGAGA TTTGTCTCA AAAAAATAA AAGAAATTTA  
AAAAATCACT CTCTTCCAA GATAGATAA TAAGACAGCA GATATACTAA GGAATAACCT CACCAACTTG TCATTGACTG  
ACATGATTTC TTTTGGCCCA CTGGCCAGC TAGTCTGGT TGGTTTTCTG GAAATGAAAG AAATAATCAG AGTTTAATGA  
CAGAGAGCGT GAGACCCAGA AAGACAAAAG TAGATGAGGT AAGTCTCTTG AGCGAGACT CTAGGGATGG GAAATTTGTG  
GTGATTGATA TGAATGATT TTTCCCTTAT CAGGTCCAG AGGATCGTGT TTATGAAGAA TTAACATAT ATTGAGTAC  
TTACAGTGAG TTGAAGACC CAGGGGAAAT GTCTCTCTCC ATTTGTTTAT AAGAATCAG TGTCCAGAAC ACTCTGATT  
ACAGCCAAGG ATCCAGAAG CCAAGGTTTT GTTAAGGGC TACTGGAATA ATTTCTATTC TCTCCAGC CTGCTGGTT  
TACATTAGAT TTATTCGCT GATAAGAATA TTTGTTTTCT GCTGCTCTG TCCACCTTAA TATGCTCTT CTATTTGTAG  
ATATGATAGA CTCCTATTTT TCTTGTTTA TATTATGACC ACACATCT CTGCTGAAA GTCAACATGT AGTAAGCAAG  
ATTTAACTGT TTGATTATA CTGTGCAAT ACAGAAAAA AGAAGGCTGG CTGAAAGTTG AGTTAACTT TGACAGTTT  
ATAATATTTG GTTCTTAGGG TTTTTTTTT TTTAGCATT CTTAATAGTT ACAGTTGGGC ATGATTGTA CCATCCACC  
ATACCCACAC AGTCACAGT ACACACAT ATGTATTACT TACATATAT ATAACCTCT ATGCAAAAT TTTACCACCA  
GTCAATAATA CATTTTTGCC AAGACATGAA GTTTTATAA GACTGTATA ATTGCCTGAA TCACCAGCAC ATTCAGTAC  
ATGATATTAT TTGCAGATT ACAAGTAGGA AGTGGGGAAC TTTTATTAAG TTAAGCTGTT TCTGGGAGG TAAATAGGT  
AAAAACAGG AAATTATAAG TGCAGAGATT AACATTTTAC AAATGTTTAT TGAAACATTT GTGAAAAAG AAGACTAAAT  
TAAGACCTGA GCTGAAATA AGTGACGTGG AAATGGAAAT AATGGTTATA TCTAAACAT GTAGAAAAAG AGTAAGTGT  
AGATTTTGT AACAAATTA AGAATAAAGT TAGACAAGCA ACTGGTTGAC TAATACATTA AGCGTTTGA TCTAAGATGA  
AAGGAGAACA CTGGTTATGT TGATAGAATG ATAAAAAGG TCGGCGCGG AGGCTCAGC CTGTAATCCC AGCCCTTTGG  
GAGGCGGAGG TGGCAGATC ACGAAGTCAG TAGTTTGAGA CAGCCTGGC CAACATAGT AAACCCGTC TCTACTAAAA  
ATACAAAAA AAAATTAGCT GGGTGTGGT GCAGTCACCT GTAGTCCAG CTACTTGGGA GGATGAGGCA GGAGAATCGC  
TTGAACCTGG GAGGCGGAGG TTGAGTGAG CCGAGATCGC ACCAGTGCAC TCCAGCCTG GTGACAATGG GAGACTCCAT  
CTCAAAAAA AAAAAAATA AAAAAAGATA AAAAGTCAGA AATCTGAAAA GTGGAGGAAG AGTACAAATA  
GACCTAAAT AAGTCTCATT TTTTGGCTT GATTTTGGG AGACAAAGG AAATGCAGCC ATAGAGGGCC TGATGACATC  
CAATACATGA GTTCTGGTAA AGATAAAAT TGATACAGG TTTGGTGTA TTATAAGAGA AATCATTATT AAATGAAGCA  
AGTTAACACT CTAAGAGAAT TATTTTGAGA TAGAAGTGAA GCTAAGCTAA ACTTCACATG CCTATAATTG GAGGAAAAA  
CTAAGGATAA AATCTAGCCT AGAAGATACA ATAAATAGTC ATAAACATGC ATTGTGAAAC TGAGAGAGC AGGTAGCCCA  
AAATAGAGAA AGATTAGATA AAGAGAAAT AAGTATCCAT CAGAGACAGT ATCTTAGGC TTGGGCAAGA GAAAAGTCCA  
CAGTGATAAG CAACTCCACC TAAGGCATGA ATATGCGGCA GAGAAAACAG CAATAGTGAA TGAATGCAAA AGGTGCTGAG  
CAATTCCAC ACATGAGTAT TGTGCATGAG TAAATGAATA AAACATTTG AAAGACCTT AGAGAAAGAG AATGGGAGCA  
TATGTGCGAA ATAAGATAGT TGATTATGAA TAGAAGGTAG TGAAGAAAAG CAAGCTAAGA AAAAATTTCT TTTATAAAAG  
AAGGAAAAGA TAGTTTATGT TTTTAGCTA AGTATAAGG TCCTACAGAT GGACTGAAA AAATCAGCT GAGAGATTA  
GTCACAATTA ATGAAATAAT TACATTTTAT GTATTGAGG TGCCAAGATT AAAAGGTGAC AGGTAGATGT TAATTTCCCT  
AGATTGTGAA AGTGATCAG ACAATCACAC ACAAATAAT TAAGTGACTT GGTATGCTT ATTTAATTGT AGGGCCTGAG  
GTTTTCCATT CTCATTTTTC TAAATACAA TTTTGTCTT CCAAATTTGA CAGCAGAATA AAAACCCTAC CCTTTCAGT  
TGTATCATGC TAAGCTGCAT CTCTACTCT GATCATCTGT AGGTATTAAT CACATCACT CCATGGCATG GATGTTACA  
TACAGACTCT TAACCCTGGT TTACCAGGAC CTCTAGGAGT GGATCCAATC TATATCTTTA CAGTTGTATA GTATATGATA  
TCTCTTTTAT TTAATCAAT TTATATTTT ATCATTTGACT ACATATTTCT TATACACAAC ACACAATTA TGAATTTTT  
CTCAAGATCA TCTGAGAGT TGCCCCACC TACCTGCCTT TTATAGTACG CCCACCTCAG GCACACAG TGAACATGC  
TGGGTTCTC TTCACACTAT CACTGCCCA AATTGTCTT CTAATTTCA ACTTCAATGT CATCTTCTC ATGAAGACCA

CTGAATGAAC ACCTTTTCAT CCAGCCTTAA TTTCTTGCTC CATACTACT CTATCCCACG ATGCAGTATT GTATCATTAA  
 TTATTAGTGT GCTTGTGACC TCCTTATGTA TTCTCAATTA CCTGTATTG TGCAATAAAT TGGAATAATG TAACITGATT  
 TCTTATCTGT GTTTGTGTTG GCATGCAAGA TTTAGGTACT TATCAAGATA ATGGGGAATT AAGGCATCAA TAAATGATG  
 CCAAAGACCA AGAGCAGTTT CTGAAGTCCT CTTTTCATC AGCTCTTTAT CAAACAGAAC ACTCTATAAA CAACCCATAG  
 CCAGAAAACA GGATGTAGGA ACAATCACCA GCACACTCTA TAAACAACCC ATAGCCAGAA AACAGAATGT AAGGACAATC  
 ACCAGCCATC TTTTGTCAAT AATTGATGGA ATAGAGTTGA AAGGAACTGG AGCATGAGTC ATATTGACC AGTCAGTCCT  
 CACTCTTATT TACTTGCTAT GTAAACTTGA GAAAGCTTTT TTCTCTTGT GAACCTCAGG TTTTACATCT GAAAATGAGA  
 AATTGGAAC AAAAGATTCC TAACCTGGTCT TTCTGTTCCC ATATTCTGTG ATTTTCAAT ATTTAGGATT TTTGGTAATC  
 ACAATTACTT AGTTTGTGGT TGAGATAGCA ACACGAATCA GAACTATTG GTGGACATAT TTTCAAAGGA GTAGCTCTCC  
 ACTTTGGGTA AAGAAGTGAT GCNGGTCGTG GTGGCTCAGC CCTGTAATCC CAGCACTTTA GGGAGGCCAA GCGGGTGGA  
 TCACGAGGTC AGGAGATCGA GACCATCCTG GCTAACACGG TGAAACCCCG TCTCTACTAA AAAATACAAA AAATTAGCCA  
 GCGGTGGTGG CGGGCGCCTG TAGTCCCACG TACTCGGGAG GCTGAGGCAG GAGAATGGCA TGAACCAGGG AGGCGGAGCT  
 TGCCGTGAGC CGAGATAGCG CCACTGCAGT CCCTCCTGGG CAAAAGAGCA AGACTGCGTC TCAAAAAAAA AAAAAAAAAA  
 AAAAAAGAA GTGTGTGGAG TAGCAGGACA CCTGCAACAA TAATATTTTT CTAAATCCCT CTGAAAAATG CTAATCAAAG  
 GGTITTTTTT CTAAAAATTG TCTTAGAAAT AAAATTTCCC CTTTGGGAGA CCGAGGCTGG CAGATCACGA GGTGAGGAGA  
 TAGAGACCAC GGTGAAACCC CGTCTCTACT AAAATACTA AAAATTAGCC GGGGNGTGGT GGTGGGTACA CCTGTAGTCC  
 CAGTACTTG GAGGCTGAGG CTGGAGAATC ACGTGAAC-3' (FRAG. NO: 1700) (SEQ. ID NO: 2504)

#### Human Histidine Decarboxylase Nucleic Acid and Antisense Oligonucleotide Fragments

5'-TCT CCC TTG GGC TCT GGC TCC TTC TC TCT CTC TCC CTC TCT CTC TGT CGC CTC CGC CCT GGC TGC TGG GGT  
 GGT GGT GC TTT TGT TCT TCC TTG CTG CC GCC CCG CTG CTT GTC T TC CTC G CTC TGT CCC TCT CTC TCT GTB CTC  
 CTC BGG CTC CBT CBT CTC CCT TGG GC-3' (FRAG. NO: 1700) (SEQ. ID NO: 1711)  
 5'-GGC TCT GGC (FRAG. NO: 1701) (SEQ. ID NO: 1712)  
 5'-CCC TTG G (FRAG. NO: 1702) (SEQ. ID NO: 1713)  
 5'-TT TGT TCT TCC (FRAG. NO: 1703) (SEQ. ID NO: 1714)  
 5'-TCT CCC TTG GGC TCT GGC TCC TTC TC-3' (FRAG. NO: 1024) (SEQ. ID NO: 1034)  
 5'-TCT CTC TCC CTC TCT CTC TGT -3' (FRAG. NO: 1025) (SEQ. ID NO: 1035)  
 5'-CGC CTC CGC CCT GGC TGC TGG GGT GGT GC-3' (FRAG. NO: 1026) (SEQ. ID NO: 1036)  
 5'-TTT TGT TCT TCC TTG CTG CC-3' (FRAG. NO: 1027) (SEQ. ID NO: 1037)  
 5'-GCC CCG CTG CTT GTC T TC CTC G-3' (FRAG. NO: 1028) (SEQ. ID NO: 1038)  
 5'-CTC TGT CCC TCT CTC TCT GTB CTC CTC BGG CTC CBT CBT CTC CCT TGG GC (FRAG. NO: 1029) (SEQ. ID NO: 1039)

#### Human Beta Tryptase Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CTT GCT CCT GGG GGC CTC CTG GTC CCT CCG GGT GTT CCC GGC GGG CCT GGC CTG GGG CBG GGG CCG CGT BGG  
 CGC GGC TCG CCB GGB CGG GCB GCG CCB GCB GCB GCB GBT TCB GCB TCC TGG-3' (FRAG. NO: 1704) (SEQ. ID NO:  
 1715)  
 5'-GCT CCT GGG GGC CT-3' (FRAG. NO: 1705) (SEQ. ID NO: 1716)  
 5'-CGT BGG CGC-3' (FRAG. NO: 1706) (SEQ. ID NO: 1717)  
 5'-T GGC CTG GGG-3' (FRAG. NO: 1707) (SEQ. ID NO: 1718)  
 5'-CTT GCT CCT GGG GGC CTC CTG-3' (FRAG. NO: 1030) (SEQ. ID NO: 1040)  
 5'-GTC CCT CCG GGT GTT CCC GGC-3' (FRAG. NO: 1031) (SEQ. ID NO: 1041)  
 5'-GGG CCT GGC CTG GGG CBG GGG CCG CGT BGG CGC GGC TCG CCB GGB CGG GCB GCG CCB GCB GCB GCB GBT TCB  
 GCB TCC TGG-3' (FRAG. NO: 1032) (SEQ. ID NO: 1042)

#### Human Tryptase-I Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CTT GCT CCT GGG GGC CTC CTG GTC CCT CTG GCT G TT CCC GGC CCT GGB CTG GGG CBG GGG CCG CGT BGG CGC  
 GGC TCG CCB GGB CGG GCB GCG CCB GCB GCB GCB GGC TCB GCB TCC TGG CCB CGG BBT TCC-3' (FRAG. NO: 1708)  
 (SEQ. ID NO: 1719)  
 5'-CTT CCT GGG GGC CTC CTG-3' (FRAG. NO: 1709) (SEQ. ID NO: 1720)  
 5'-B TCC TGG CCB CGG BBT TCC -3' (FRAG. NO: 1710) (SEQ. ID NO: 1721)  
 5'-GTC CCT C-3' (FRAG. NO: 1711) (SEQ. ID NO: 1722)  
 5'-CTT GCT CCT GGG GGC CTC CTG-3' (FRAG. NO: 1033) (SEQ. ID NO: 1043)  
 5'-GTC CCT CTG GCT G TT CCC GGC-3' (FRAG. NO: 1034) (SEQ. ID NO: 1044)  
 5'-CCT GGB CTG GGG CBG GGG CCG CGT BGG CGC GGC TCG CCB GGB CGG GCB GCG CCB GCB GCB GCB GGC TCB GCB  
 TCC TGG CCB CGG BBT TCC -3' (FRAG. NO: 1035) (SEQ. ID NO: 1045)

#### Human Prostaglandin D Synthase Nucleic Acid and Antisense Oligonucleotide Fragments

5'-GGT GTG CGG GGC CTG GTG CC CCT GGG CCT CGG GTG CTG CCT GT GCG CTG CCT TCT TCT CCT GG GTC CTC GCC  
 GGG GCC CTT GCT GCC CTG GCT GT GCC CTG GGG GTC TGG GTT CGG CTG T CCC CBG CBG GBC CBG TCC CBT CCB  
 CBG CGT GTG BTG BGT BGC CBT TCT CCT GCB GCC GBG-3' (FRAG. NO: 1712) (SEQ. ID NO: 1723)  
 5'-T TCT CCT GCB GCC GBG -3' (FRAG. NO: 1713) (SEQ. ID NO: 1724)  
 5'-CTT GCT GCC CTG GCT GT-3' (FRAG. NO: 1714) (SEQ. ID NO: 1725)  
 5'-TCT TCT CCT GG-3' (FRAG. NO: 1715) (SEQ. ID NO: 1726)  
 5'-GGT GTG CGG GGC CTG GTG CC-3' (FRAG. NO: 1036) (SEQ. ID NO: 1046)  
 5'-CCT GGG CCT CGG GTG CTG CCT GT-3' (FRAG. NO: 1037) (SEQ. ID NO: 1047)  
 5'-GCG CTG CCT TCT TCT CCT GG-3' (FRAG. NO: 1038) (SEQ. ID NO: 1048)  
 5'-GTC CTC GCC GGG GCC CTT GCT GCC CTG GCT GT-3' (FRAG. NO: 1039) (SEQ. ID NO: 1049)  
 5'-GCC CTG GGG GTC TGG GTT CGG CTG T-3' (FRAG. NO: 1040) (SEQ. ID NO: 1050)  
 5'-CCC CBG CBG GBC CBG TCC CBT CCB CBG CGT GTG BTG BGT BGC CBT TCT CCT GCB GCC GBG -3'

(FRAG. NO:1041) (SEQ. ID NO:1051)

**Human Cyclooxygenase-2 Nucleic Acid and Antisense Oligonucleotide Fragments**5'-GGG CGC GGG GCB GCB TCG C TTT GGG CTT TTC TCC TTT GGT T TGB GCG CCB GGB CCG CGC BCB GCB GCB GGG  
CGC GGG GCB GCB TCG CBG CGG CGG GCB GGG-3' (FRAG. NO: 1716) (SEQ. ID NO:1727)

5'-G GCB GGG -3' (FRAG. NO: 1717) (SEQ. ID NO: 1728)

5'-TCC TTT GGT T-3' (FRAG. NO:1718) (SEQ. ID NO:1729)

5'- GGG CGC GGG GCB GCB TCG C-3' (FRAG. NO:1042) (SEQ. ID NO:1052)

5'- TTT GGG CTT TTC TCC TTT GGT T-3' (FRAG. NO:1043) (SEQ. ID NO:1053)

5'-TGB GCG CCB GGB CCG CGC BCB GCB GGG CGC GGG GCB GCB TCG CBG CGG CGG GCB GGG -3'  
(FRAG. NO:1044) (SEQ. ID NO:1054)**Human Eosinophil Cationic Protein Nucleic Acid and Antisense Oligonucleotide Fragments**5'-CCT CCT TCC TGG TCT GTC TGC CBG BCB BBT TTG GGB BGT GBB CBG TTT TGG BBC CBT GTT TCC CBG TCT CTG  
BGC TGT GGC-3' (FRAG. NO: 1719) (SEQ. ID NO: 1730)

5'-TTC TCC TTT GGT T-3' (FRAG. NO:1720) (SEQ. ID NO: 1731)

5'-T TTC TCC TTT GGT T-3' (FRAG. NO:1721) (SEQ. ID NO:1732)

5'- GGG CGC GGG GCB GCB TCG C-3' (FRAG. NO:1042) (SEQ. ID NO:1052)

5'- TTT GGG CTT TTC TCC TTT GGT T-3' (FRAG. NO:1043) (SEQ. ID NO:1053)

5'-TGB GCG CCB GGB CCG CGC BCB GCB GGG CGC GGG GCB GCB TCG CBG CGG CGG GCB GGG -3'  
(FRAG. NO:1044) (SEQ. ID NO:1054)**Human Eosinophil Derived Neurotoxin Nucleic Acid and Antisense Oligonucleotide Fragments**5'-GCC CTG CTG CTC TTT CTG CT TCC CTT GGT GGG TTG GGC C GCT GGT TGT TCT GGG GTT C TTG CTG CCC CTT CTG  
TCC C TGT TTG CTG GTG TCT GCG C 5'- CCC CBB CBG BBG BBG CBG BCB BBT TTG GGB BGT GBB CBG TTT TGG BBC  
CBT GTT TCC TGT-3'

(FRAG. NO: 1722) (SEQ. ID NO: 1733)

5'-TTC CTG T-3' (FRAG. NO:1723) (SEQ. ID NO: 1734)

5'-CTC TTT CTG CT-3' (FRAG. NO: 1724) (SEQ. ID NO:1735)

5'-CCC CTT CTG TCC C-3' (FRAG. NO:1725) (SEQ. ID NO: 1736)

5'- GCC CTG CTG CTC TTT CTG CT-3' (FRAG. NO:1047) (SEQ. ID NO:1057)

5'- TCC CTT GGT GGG TTG GGC C-3' (FRAG. NO:1048) (SEQ. ID NO:1058)

5'- GCT GGT TGT TCT GGG GTT C-3' (FRAG. NO:1049) (SEQ. ID NO:1059)

5'- TTG CTG CCC CTT CTG TCC C-3' (FRAG. NO:1050) (SEQ. ID NO:1060)

5'- TGT TTG CTG GTG TCT GCG C -3' (FRAG. NO:1051) (SEQ. ID NO:1061)

5'- CCC CBB CBG BBG BBG CBG BCB BBT TTG GGB BGT GBB CBG TTT TGG BBC CBT GTT TCC TGT-3' (FRAG. NO:1052)  
(SEQ. ID NO:1062)**Human Eosinophil Peroxidase Nucleic Acid and Antisense Oligonucleotide Fragments**5'-GCG CTC GGC CTG GTC CCG G GGG TCT CCT CTT GTT GTT GC TTG CGC CTC CTG CTG GGG GT CC CTC TGT TCT TGT  
TTT GGG GGC GGG CCC GGC CGT TGT CTT G GTT TGG GGG TTT CCG TTG GGG TTC TCC TGG CCC GGG CCT TGC CC  
GGC CGT GGT CCC GGC TTC GTTCTT GTC TCC GTC TCG GCT CTT CTG GGG CCT TGC GCT GTC TTT GGT G 5'-GCB CCG  
TCC BGT GBT GGT GCG GTB CTT GTC GCT GCB GCG CTC GGC CTG GTC CCG GBG BGC CACCGCTCCT GTCAGCCAAC  
AAATATCCAT TGAGCGACAC CTGTGTCCCA GGTGCTGCTC TGGGCCCTGG GAGAAAGTGA TCACTGGGCT TGGTAGTAGA  
GGGTAGGGAT GGAGTGAAGG GTAGGCAGGA AGAATGTCCC CAGGCTGGTA GGAGGTGGGG TGGGGGGTTT CAGTCTCAAA  
ACTCCATGA AAACAGAGA GAAGTTTCAG AACTCCACCC AAGAGGCTGG GTTTCTAGGG CCCAGAGCTG CCTCCCCCA  
CCCTAGAATG GGCTATAAAA GTCCCTTCCC AGTACGTCC AGAGAAGAGC TGGAGGAAGT GAGAGGTCGG CTGGGGGTCC  
TCAAAGTGAG AGGGGAGCAG AGGATCCTCC CGTGCAAGGCT GTGGATGTCA CTCACTTCCC AGCTGGTGAA GCCTCGCTGC  
AGAGATGCAT CTGCTCCAG CCTGGCAGG GGTCTGGCC ACACCTGTC TCGCCAGCC CTGTGAGGGC ACTGACCCAG  
GTAATAGTCC CTTAGACAGG CAAGGAGGAG GGAGGGGAAA TGGAAAGGGA AGCACTTGGG TCTTGGAGGG GGTCTGTGG  
CTTGCTGAAC CTTGAGTCCC CATCTCTTTG AACAGCCTCC CCTGGGGCAG TGGAGACCTC GGTCTGCGA GATGTCATAG  
CAGAGGCCAA GTTGCTGGTG GATGCTGCCT ACAATTGGAC CCAGAAGAGG TGGACTTGGG TCTGGGGGCT GCATGGGCT  
GGGAGGATCA GT TAATACCTTG TGGGGTCAGG GAGCCCATGT CCCGTGCTGA TGTTATTTC CCACCAGGTC  
CGGGCTGTCT CCAACCAGAT TGTGCGCTTC CCAATGAGA GACTGACCTC CGACCGTGGC CGAGCCCTCA TGTCATGCA  
GTGGGGCCAG TTCAATTGACC ATGACCTGGA CTTCTCCCCG GAGTCCCCGG CCAGAGTGGC CTTCACTGCA GGCCTTGACT  
GTGAGAGGAC CTGCGCCAG CTGCCCCCT GCTTCCCAT CAAGGTACCT ACCCTCAGCC AATCTCCAT GCCCTGTGT  
GGCTCCCCC AAAGGCAAGG TGCTGGGGGT GGGATCTGG AAGACTGGAG CACCATCCTT AAGGAGCTGC CTGTGGAGCT  
AGGGTATGAG ACAGAGACAC AAG CACTGTCTCC TCTTCCATCT CAGATCCAC CCAATGACCC CCGCATCAAG  
AACCAGCGTG ACTGCATCCC TTTCTTCCGC TCGGCACCCT CATGCCCCCA AAACAAGAAG AGAGTCCGCA ACCAGATCAA  
CGCGCTCACC TCCTTTGTGG ACGCCAGCAT GGTGTATGGC AGTGAGGTCT CCCTCTCGCT GCGGCTCCGC AACCGGACCA  
ACTACCTGGG GCTGCTGGCC ATCAACCAGC GCTTCAAGA CAACGGCCGG GCCCTGCTGC CCTTCGACAA CTTGCACGAT  
GACCCTGTC TCCTACCAA CCGCTCGGCG CGCATCCCCT GCTTCTGGC AGGTGAGACA GGGAGGAAGG TGGTGTCTTC  
CCAGGAAACA GCCATCCCTG GGGTCCCAAC TGGGAAGCAA TGGTGGGATG TGGTGAAGGT ACATGGTTTG GGACCTCAGT  
ATTAGGCACA CCATAAGCAT GGATCTGTGC AC TGAAGATG GAGGTCCAGT GAGGGCCAGG AGTTTGGCCC  
ACCCCGTCTC TCCCATCCCC AGCCCTGGGT CTACCCTGGT AGAAAGACAT TTCTCTGGGA AAGGCTGCAG TAAATCTGAG  
CTTGGGGTTT TCAAGGTGAC ACCCGATCAA CGGAAACCCC CAACTGGCA GCCATGCACA CCTCTTTAT GCGAGAGCAC  
AACCAGCTGG CCACCGAGCT GAGACGCTG AATCCCCGT GGAATGGAGA CAACTGTAC AATGAGGCTC GGAAGATCAT  
GGGGGCCATG GTCCAGGTAA GGAGCTCTGC ATCCAGCAT CCCC CTTTGTATCT CCACCCACCA ATAGTAAATT  
AATGTGTGA CATTTGACGT GATGACAATA AAGAATATGT CTGAGCCACC CTTTGAAAAG GCAAGGGTAT GGGTGAGTAT  
CCTGTGGGA ATGTTCTCTC TGCTTCCCT TCCAGATCAT CACCTACCGA GACTTCTGC CCTGGTTCT GGGCAAGGCC  
CGGGCCAGGA GAACCTGGG GCACTACAGG GGTACTGCT CCAATGTGGA CCCACGGGTG GCCAATGTCT TCACCCTGGC

CTTCCGCTTT GGCCACACAA TGCTCCAGCC CTTTCATGTTT CGCTTGGACA GTCAGTACCG GGCCTCCGCA CCCTAACTCGC  
ATGTCCCACT TAGCTCTGCC TTCTTTGCCA GCTGGCGGAT CGTGTATGAA GGTGACCAGG TTTTCCAGGG GGCAATGGG  
GGTGAGGGTG GGGAGCATGC CTTCCCTAG GTGG TCCAGCTGCT TCATGTCTCT CCAGAACTCT GTTCTCTGAC  
AAACGTTACT AACATACCCG ACTGGCTTGT CCAGCTCTGG GCTAGCTTGG CATCATGTGA TAACCAAGT AGCTTCCAG  
AGGCTGGTCC AATCTGTGCT GCTCACATTC CTTGCCACCA GGGGGCATCG ACCCATCCT CCGGGGCTC ATGGCCACCC  
CTGCCAAGCT GAACCGTCAG GATGCCATGT TAGTGGATGA GCTCCGGGAC CGGCTGTTTC GGCAAGTGAG GAGGATTGGG  
CTGGACCTGG CAGCTCTCAA CATGCAACGA AGCCGGGACC ACGGCCTTCC AGGTGAGGGG GCTGTCCACC TCTTCTCCA  
GCTTTGCTCG GGCCAGGCTG CTCAAGGGGT TCTGGGAAGA CCTGGTACC CGACTGCCTG GTAGGTTCTG GTGGCAGAAA  
CGAGGTGTTT TCACCAAAAG ACAGCGCAAG GCCCTGAGCA GAATTCCTT GTCTCGAAT ATATGTGACA ATACCGGTAT  
CACCACGGT TCAAGGGACA TCTTCAGAGC CAACATCTAC CCTCGGGGCT TTGTGAAGT CAGCCGTATC CCCAGGTTGA  
ACCTATCAGC CTGGCAGGG ACATGAGGCT TCTGACGTA AGGGAGGCC ACCTCCAGCA CCCTGGGCTG GTTAAGCCTC  
ACATCCTTCC CTGGATGGAT GGCTGAGTCC TTTAGGTCT AATGACAG AAAACAGAG TTGTCACTG GTACTCTTTC  
CAAGTGGCTT CCAATGTGC TAGTTTCTGG GCTGACAGTC AATTCCAGGC CCTAGGACTT TGGGGGGAAA TTAGGAGCAT  
CCAATA GAATTCCTG GCCAGGACCC CTGCCAGGC ACTGACCCAG CCTCCCTGG GGCAGTGGAG ACCTCGGTCC  
TGCGAGACTG CATAGCAGAG GCAAAGTTGC TGGTGGATGC TGCTACAAT TGGACCCAGA AGAGCATCAA GCAGCGGCTT  
CGCAGCGGT CAGCCAGCCC CATGGACCTC CTGTCTACT TCAAACAACC GGTAGCAGCC ACCAGGACAG TTGTTCCGGC  
CGCAGATTAT ATGCATGTG CTTTGGGGCT GCTTGAAGAG AAGTTACAAC CCCAGCGGTC CGGACCCCTC ATTGTCACTG  
ATGTGTAAAC AGAACCACAG CTGCGGCTGC TGTCCAGGC CAGTGGCTGT GCTCTCCGG ACCAGGCCGA GCGCTGGAG  
GACAAGTACC GCACCATCAC TGGACGGTGC AACAACAAGA GGAGACCTT GCTAGGGGCC TCAACCAGG CTCTGGCTCG  
CTGGCTGCCC GCGAGTATG AGGATGGGT GTCGCTCCC TCGGCTGGA CCCCCAGCAG GAGGCGCAAT GGCTTCTTC  
TCCCTCTTGT CCGGGCTGTC TCCAACCAGA TTGTGCGCTT CCCCAGTGA AGACTGACCT CCGACCGTGG CCGAGCCCTC  
ATGTTTCATGC AGTGGGGCCA GTTCATTGAC CATGACCTGG ACTTCTCCC GGAGTCCCCG GCCAGAGTGG CTTTCACTGC  
AGGCGTTGAC TGTGAGAGGA CTTGCGCCCA GCTGCCCCC TGTCTTCCA TCAAGATCCC ACCCAATGAC CCCCAGATC  
AGAACCAGCG TGAAGTATC CTTTCTTCC GCTGCGCACC CTGATGCCCC CAAAACAAGA ACAGAGTCCG CAACCCAGTC  
AACGCGCTCA CTTCTTTGT GGACGCCAGC ATGGTGTATG GCAGTGAGGT CTCTCTCTG CTGCGGCTCC GCAACCGGAC  
CAACTACCTG GGGCTGCTGG CCATCAACCA GCGCTTCAA GACAACGGCC GGGCCCTGCT GCCCTTCGAC AACCTGCACG  
ATGACCCCTG TCTCCTACC AACCGCTCG GCGCATCCC CTGCTTCTG GCAGGTGACA CCGCATCAAC GGAACCCCTC  
AACTGGCAG CCATGCACAC CCTCTTTATG CGAGAGCATA ACCGGCTGGC CACCGAGCTG AGAGCGCTGA ATCCCGGTG  
GAATGGAGAC AAAGTGTACA ATGAGGCTCG GAAGATCATG GGGGCCATGG TCCAGATCAT CACTACCGA GACTTTCTG  
CCCTGGTTCT GGGCAAGGCC CCGGCCAGGA GAACCTGGG GACTACAGG GGGTACTGCT CCAATGTGA CCACTGGGTG  
GCCAATGTCT TCACCTGGC CTCCGCTTT GGCCACACAA TGCTCCAGCC CTTTCATGTT CGCTTGGACA GTCAGTACCG  
GGCCTCCGCA CCAACTCGC ATGTCCCACT TAGCTCTGCC TTCTTTGCCA GCTGGCGGAT CGTGTATGAA GGGGGCATCG  
ACCCATCCT CCGGGGCTC ATGGCCACCC CTGCCAAGCT GAACCGTCAG GATGCCATGT TAGTGGATGA GCTCCGGGAC  
CGGCTGTTT GGCAAGTGAG GAGGATTGGG CTGGACCTGG CAGCTCTCAA CATGCAACGA AGCCGGGACC ACGGCCTTCC  
AGGTACAAT GCTTGGAGG CTTTCTGTG GCTCTCCAG CCCCAGGATT TGGCAGAGT TAGCCGGGTG CTGAAAAAC  
AGGACTTGGC AAGGAAGTTC CTGAATTTGT ATGGAACACC TGACAACATT GACATCTGGA TTGGGGCCAT CGCTGAGCT  
CTTTGCGCG GGGCTCGAGT GGGGCTCTT CTGGCTTGT TGTTCGAGAA CCAGTTCAGA AGAGCCGAGA CGGAGACAGG  
TTCTGGTGGC AGAAGGAGGT GTTTTACCA AAGACAGCG AAGGCCCTGA GCAGAATTT CTTGTCTCGA ATTATATGTG  
ACAATACCGG TATCACCAG GTTTCAAGGG ACATCTTCA AGCCAACATC TACCCTCGGG GCTTTGTGAA CTGCAGCCGT  
ATCCCAAGT TGAACCTATC AGCCTGGCGA GGGACATGAG GCTTCTGCAG GAGTCTATCC CAAGTCTCCA ACTTTTGGAG  
ACAAGGGGAA GGGGAGGACC ATGAGGCTGC CTTGTCTCCC TGGAGCAAGT GCAGGCTCGT GACGCTTCTG CTGGCTACAG  
CTCAGAGCTG GGTTCGCCAG CCAGGAGTGA AGGCTGGGG CTTCTATCAG CAATGGACCT TCCGCTTGG GAGCCTCTTA  
GGTATTAGG TATGAATCAG CGCCACGTGC AAAGGCTTGG GAGCCAAGCC ATGTGGTCT GCACCCAGG CAAGAAAAGT  
CAGCTGGAGG GTTTACAGCA CTTTCTACTG TTTCCAGCC CTCCCTCCC TCCCTACCA TGAATAAGAG ACCACTCGGT  
CCTAGCCTCC AGACACCCA CAATACTCT CTGAGCTGA GGCAGGCAG CATGCTCTG TTCTACCAAT AAAGCACTGC  
CGGAATTC-3' (FRAG. NO: 1726) (SEQ. ID NO: 1737)

5'-CACCGCTCCT GTCAGCCAAC AAATATCCAT TGAGCGACAC CTGTGTCCCA GGTGCTGCTC TGGGCCCTGG  
GAGAAGTGCA TCAGTGGGCT TGGTAGTGA GGGTAGGAT GGAGTGAAGG GTAGGCAGGA AGAATGTCCC CAGGCTGGTA  
GGAGGTGGG TGGGGGTTT CAGTCTCAA ACTCCATGA AAACAGAGA GAAGTTTCAG AACTCCACCC AAGAGGCTGG  
GTTTCTAGG CCCAGAGCTG CCTCCCCCA CCTAGAATG GGCTATAAAA GTCCCTTCCC AGCTACGTCC AGAGAAGAGC  
TGGAGGAAGT GAGAGGTCCG CTGGGGGTCC TCAAAGTGAG AGGGGAGCAG AGGATCCTCC CGTGCAGGCT GTGGATGTCA  
CTCACTTCCC AGCTGGTGAA GCCTCGTGC AGAGATGCAT CTGCTCCAG CCTGGCAGG GGTCTTGCC ACTCTGCTC  
TCGCCAGCC CTGTGAGGGC ACTGACCCAG GTAATAGTCC CTAGACAGG CAAGGAGGAG GGAGGGGAAA TGGAAAGGGA  
AGCACTTGG TCTTGGAGGG GGTCTGTGG CTTGTGAAC CTTGATGCC CATCTCTTG AACAGCCTCC CTTGGGCGAG  
TGGAGACCTC GGTCTGCGA GACTGCATAG CAGAGGCCAA GTTGTGGTG GATGCTGCT ACAATTGGAC CCAGAAGAGG  
TGGACTTGG TCTGGGGCT GCATGGGCT GGGAGGATCA GT-3' (FRAG. NO: 2483) (SEQ. ID NO: 2483)

5'-TAATACCTTG TGGGGTCAAG GAGCCCATGT CCCGTGCTGA TGTTATTTCC CCACCAGGTC CCGGCTGTCT CCAACCAGAT  
TGTGCGCTC CCAATGAGA GACTGACCTC CGACCGTGGC CGAGCCCTCA TGTTTCATGCA GTGGGGCCAG TTCATTGACC  
ATGACCTGGA CTTCTCCCCG GAGTCCCCGG CCAGAGTGGC CTTACTGCA GCGGTTGACT GTGAGAGGAC CTGCGCCAG  
CTGCCCCCT GCTTCCCAT CAAGGTACCT ACCCTCAGCC AATCTCCAT GCCCTGTGT GGCCTCCCC AAAGGCAAGG  
TGCTGGGGGT GGGGATCTGG AAGACTGGAG CACCATCCTT AAGGAGCTGC CTGTGGAGCT AGGTATGAG ACAGAGACAC  
AAG-3' (FRAG. NO: 2484) (SEQ. ID NO: 2484)

5'-CACTGTCTCC TCTTCATCT CAGATCCAC CCAATGACCC CCGCATCAAG AACCAGCGTG ACTGCATCCC TTTCTTCCGC  
TCGGCACCT CATGCCCCA AAACAAGAAG AGAGTCCCA ACCAGATCAA CGCGCTCACC TCCTTTGTGG ACGCCAGCAT  
GGTGTATGGC AGTGAGGTCT CCTCTCGCT GCGGCTCCG AACCAGGACA ACTACCTGGG GCTGCTGGCC ATCAACCAGC  
GCTTTCAAG CAACGGCCGG GCCCTGCTGC CTTTCGACA CCTGACGAT GACCCCTGTC TCCTACCAA CCGCTCGGCG  
CGCATCCCCT GCTTCTTGGC AGGTACAGCA GGGAGGAAGG TGCTGTCTT CCAGGAAAGA GCCATCCCT GGGTCCCAAC  
TGGGAAGCAA TGGTGGGATG TGGTGAAGGT ACATGGTTG GGACCTCAGT ATTAGGCACA CCATAAGCAT GGATCTGTGC  
AC-3' (FRAG. NO: 2485) (SEQ. ID NO: 2485)

5'-TGAAGAGATG GAGGTCCAGT GAGGGCCAGG AGTTTGGCCC ACCCGTCTC TCCCATCCCC AGCCTGGGT CTACCCTGGT  
AGAAAGACAT TTCTCTGGGA AAGGCTGCAG TAAATCTGAG CTTGGGGTTT TCAAGGTGAC ACCCGATCAA CGGAAACCCC  
CAAATGGCA GCCATGCACA CCTCTTTAT GCGAGAGCAC AACC GGCTGG CCACCGAGCT GAGACGGCTG AATCCCCGGT  
GGAATGGAGA CAAACTGTAC AATGAGGCTC GGAAGATCAT GGGGGCCATG GTCCAGGTAA GGAGCTCTGC ATCCCAGCAT  
CCCC-3' (FRAG.NO: ) (SEQ.ID NO:2486)

5'-CTTTGTATCT CCACCCACCA ATAGTAAATT AATGTTGTCA CATTGACGT GATGACAATA AAGAATATGT CTGAGCCACC  
CTTTGAAAAG GCAAGGGTAT GGGTGAGTAG CCTCTGGGGA ATGTTCTCCT TGTCTTCCCT TCCAGATCAT CACCTACCGA  
GACTTTCTGC CCTGGTTCT GGGCAAGGCC CGGGCCAGGA GAACCTGGG GCACTACAGG GGGTACTGCT CCAATGTGGA  
CCCACGGGTG GCCAATGTCT TCACCCTGGC CTCCGCTTT GGCCACACAA TGCTCCAGCC CTTCATGTTT CGCTTGGACA  
GTCAGTACCG GGCCTCCGCA CCAACTCGC ATGTCCCACT TAGCTCTGCC TTCTTTGCCA GCTGGCGGAT CGTGTATGAA  
GGTGACCAGG TTTTCCAGGG GGCAATGGG GGTGAGGGTG GGGAGCATGC CCTCCCTAG GTGG-3' (FRAG.NO: ) (SEQ.ID  
NO:2487)

5'-TCCAGCTGCT TCATGTCTCT CCAGAACTCT GTTTCCTGAC AAACGTTACT AACATACCCG ACTGGCTTGT CCAGCTCTGG  
GCTAGCTTGG CATCATGTGA TAACCCAAGT AGCTTCCAG AGGCTGGTCC AATCTGTGCT GCTCACATTC CTGCCACCA  
GGGGGCATCG ACCCATCCT CCGGGGCTC ATGGCCACCC CTGCCAAGCT GAACCGTCAG GATGCCATGT TAGTGGATGA  
GCTCCGGGAC CGGCTGTTT GGCAAGTGAG GAGGATTGGG CTGGACCTGG CAGCTCTCAA CATGCAACGA AGCCGGGACC  
ACGGCCTTCC AGGTGAGGGG GCTGTCCACC TCTTCTCCA GCTTTGCTCG GGCCAGGCTG CTCAAGGGGT TCTGGGAAGA  
CCTGTGAC-3' (FRAG.NO: ) (SEQ.ID NO:3488)

5'-CGACTGCTG GTAGTTCTG GTGGCAGAAA CGAGGTGTTT TCACCAAAAG ACAGCGCAAG GCCCTGAGCA  
GAATTTCTT GTCTCGAATT ATATGTGACA ATACCGGTAT CACCACGGT TCAAGGGACA TCTTCAGAGC CAACATCTAC  
CCTCGGGCT TGTGAACTG CAGCCGTATC CCCAGGTGA ACCTATCAGC CTGGCGAGG ACATGAGGCT TCTGCAGGTA  
AGGGGAGGCC ACCTCAGCA CCTGGGCTG GTTAAGCCTC ACATCCTCC CTGGATGGAT GGCTGAGTCC TCTTAGGTCT  
CTAAGCAGAG AAAACAGAAC TTGTCACTAG GTACTCTTC CAAGTGGCTT CCAATGTGC TAGTTTCTGG GCTGACAGTC  
AATTCAGGC CTAGGACTT TGGGGGGAAA TTAGGAGCAT CCAACTA-3' (FRAG.NO: ) (SEQ.ID NO:2489)

5'-GAATTCCTG GCCAGGACC CTGCCAGGC ACTGACCCG CCTCCCTGG GCGAGTGGG ACCTCGGTCC  
TGCGAGACTG CATAGCAGAG GCCAAGTTG TGGTGGATG TGCCTACAAT TGGACCCAGA AGAGCATCAA GCAGCGGCTT  
CGCAGCGGT CAGCCAGCCC CATGGACCTC CTGTCTACT TCAAACAACC GGTAGCAGCC ACCAGGACAG TTGTTCCGGG  
CGCAGATTAT ATGCATGTGG CTTTGGGGCT GCTTGAAGAG AAGTTACAAC CCCAGCGGTC CGGACCTTC ATTGTCACTG  
ATGTGTAAC AGAACCACAG CTGCGGCTGC TGTCCAGGC CAGTGGCTGT GCTCTCCGG ACCAGGCCGA GCGCTGCAGC  
GACAAGTACC GCACCATCAC TGGACGGTGC AACAACAAGA GGAGACCTT GCTAGGGGCC TCCAACCAGG CTCTGGCTCG  
TGGCTGCCC GCGAGTATG AGGATGGGT GTCGTCTCCC TCGGCTGGA CCCCAGCAG GAGGCGCAAT GGCTTCTTC  
TCCCTCTGT CCGGGCTGC TCCAACCAGA TTGTGCGCTT CCCAATGAG AGACTGACCT CCGACCGTGG CCGAGCCCTC  
ATGTTTATGC AGTGGGGCCA GTTCATTGAC CATGACCTGG ACTTCTCCC GGAGTCCCCG GCCAGAGTGG CTTTCACTGC  
AGGCGTTGAC TGTGAGAGGA CTTGCGCCA GCTGCCCCC TGCTTCCCA TCAAGATCCC ACCAATGAC CCCCAGATCA  
AGAACCAGCG TGAATGCATC CTTTCTTCC GTCGCGACC CTCATGCCCC CAAAACAAGA ACAGAGTCCG CAACCAGATC  
AACCGCTCA CTTCTTTGT GGACGCCAGC ATGGTGTAT GCAGTGAGGT CTCCTCTCG CTGCGGCTCC GCAACCGGAC  
CAAGTCCCG GCGCTGCTGG CCATCAACCA GCGCTTCAA GACAACGGCC GGGCCCTGCT GCGCTTGCAG AACCTGCACG  
ATGACCCCTG TCTCTCAC ACCCGCTCG CGCGCATCCC CTGCTCTCG GCAGGTGACA CCCGATCAAC GGAAACCCCC  
AACTGGCAG CCATGCACAC CTTCTTATG CGAGAGCACA ACCGGCTGGC CACCGAGCTG AGACGCTGA ATCCCCGGTG  
GAATGGAGAC AAATGTACA ATGAGGCTCG GAAGATCATG GGGGCCATGG TCCAGATCAT CACCTACCGA GACTTTCTGC  
CCTGGTTCT GGGCAAGGCC CGGGCCAGGA GAACCTGGG GCACTACAGG GGGTACTGCT CCAATGTGGA CCCACGGGTG  
GCCAATGTCT TCACCTGGC CTTCCGCTT GGCCACACAA TGCTCCAGCC CTTCATGTTT CGCTTGGACA GTCAGTACCG  
GGCCTCCGA CCAACTCGC ATGTCCACT TAGCTCTGCC TTCTTTGCCA GCTGGCGGAT CGTGTATGAA GGGGACATCG  
ACCCATCCT CCGGGGCTC ATGGCCACCC CTGCCAAGCT GAACCGTCAG GATGCCATGT TAGTGGATGA GCTCCGGGAC  
CGGCTGTTT GGCAAGTGAG GAGGATTGGG CTGGACCTGG CAGCTCTCAA CATGCAACGA AGCCGGGACC ACGGCCTTCC  
AGGGTACAAT GCTTGGAGGC GCTTCTGTGG GCTCTCCAG CCCCAGGATT TGGCACAGCT TAGCCGGGTG CTGAAAAACC  
AGGACTTGGC AAGGAAGTTC CTGAATTTGT ATGGAACACC TGACAACATT GACATCTGGA TTGGGGCCAT CGCTGAGCCT  
CTTTTCCGG GGGCTCGAGT GGGGCTCTT CTGGCTTGT TGTTCGAGAA CCAAGTTCAGA AGAGCCGAGA CGGAGACAGG  
TTTGGTGGC AGAAGAGGT GTTTACCA AAGACAGCG AAGGCCCTGA GCAGAAATTC CTGTCTCGA ATTATATGTG  
ACAATACCGG TATCACCAG GTTCAAGGG ACATCTCAG AGCCAACATC TACCCTGGG GCTTTGTGAA CTGACGCGT  
ATCCCAGGT TGAACCTATC AGCCTGGCGA GGGACATGAG GCTTCTGCAG GAGTCTATCC CAAGTCTCCA ACTTTTGGAG  
ACAAGGGGAA GGGGAGGACC ATGAGGCTGC CTTGTCTCCC TGGAGCAAGT GCAGGCTCGT GACGCTTCTG CTGGCTACAG  
CTCAGAGCTG GGTTCCTCAG CCAGGAGTGA AGGCTGGGG CTCTATCAG CAATGGACCT TCCGCTTGG GAGCCTCTTA  
GGTATTAGGC TATGAATCAG CGCCACGTGC AAAGGCTTGG GAGCCAAGCC ATGTGGTCTT GCACCCAGG CAAGAAAAGT  
CAGCTGGAGG GTTACAGCA CTTTCTACT TTTCCAGCC CTCCTCCCC TCCCTACCA TGAATAAGAG ACCACTCGT  
CCTAGCCTCC AGACACCCA CAATACTCT CTGAGCTGA GGCCAGGCAG CATGCTCTGC TTCTACCAAT AAAGCACTGC  
CGGAATTC-3' (FRAG.NO: ) (SEQ.ID no:2490)

5'-TC GGC CTG GTC CCG G-3' (FRAG. NO: 1727) (SEQ. ID NO:1738)

5'-TGG GGG TTT CCG TTG-3' (FRAG. NO: 1728) (SEQ. ID NO: 1739)

5'-TG GTC CCG GBG BGC -3' (FRAG. NO: 1729) (SEQ. ID NO: 1740)

5'-GCG CTC GGC CTG GTC CCG G-3' (FRAG. NO:1053) (SEQ. ID NO:1063)

5'-GGG TCT CCT CTT GTT GTT GC-3' (FRAG. NO:1054) (SEQ. ID NO:1064)

5'-TTG CCG CTC CTG CTG GGG GT CC-3' (FRAG. NO:1055) (SEQ. ID NO:1065)

5'-CTC TGT TCT TGT TTT GGG GGC-3' (FRAG. NO:1056) (SEQ. ID NO:1066)

5'-GGG CCC GGC CGT TGT CTT G-3' (FRAG. NO:1057) (SEQ. ID NO:1067)

5'-GTT TGG GGG TTT CCG TTG-3' (FRAG. NO:1058) (SEQ. ID NO:1068)

5'-GGG TTC TCC TGG CCC GGG CCT TGC CC-3' (FRAG. NO:1059) (SEQ. ID NO:1069)

5'-GGC CGT GGT CCC GGC TTC GTT GC-3' (FRAG. NO:1060) (SEQ. ID NO:1070)

5'-CCT GTC TCC GTC TCG GCT CTT CTG-3' (FRAG. NO:1061) (SEQ. ID NO:1071)



5'-GGG CCT TGC GCT GTC TTT GGT G-3' (FRAG. NO:1062) (SEQ. ID NO:1072)

5'-GCB CCG TCC BGT GBT GGT GCG GTB CTT GTC GCT GCB GCG CTC GGC CTG GTC CCG GBG BGC -3' (FRAG. NO:1063) (SEQ. ID NO:1073)

**Human Interleukin Adhesion Molecule-1 (ICAM-1) Nucleic Acid and Antisense Oligonucleotide Fragments**

5'-GCG CGG GCC GGG GGC TGC TGG G GGT TGG CCC GGG GTG CCC C GCC GCT GGG TGC CCT CGT CCT CTG CCG TC GTG TCT CCT GGC TCT GGT TCC CC GCT GCG CCC GTT GTC CTC TGG GGT GGC CTT C GCT CCC GGG TCT GGT TCT TGT GT TGG GGG TCC CTT TTT GGG CCT GTT GT GGC GTG GCT TGT GTG TTC GGT TTC TGC CCT GTC CTC CCG CGT CCC CGG BGC CTC CCC GGG GCB GGB TGB CTT TTG BGG GGG BCB CBG BTG TCT GGG CBT TGC CBG GTC CTG GGB BCB GBG CCC CGB GCB GCB CCB GGB GTG CCG GCB GCG CCG GCC GGG GGC TGC TGG GBG CCB TBG CGB GGC TGB G-3' (FRAG. NO: 1730)

(SEQ. ID NO: 1741)

5'-GGG GGC TGC TGG G-3' (FRAG. NO: 1731) (SEQ. ID NO:1742)

5'-T GTC CTC CCG CGT CCC-3' (FRAG. NO:1732) (SEQ. ID NO:1743)

5'-G CCB TBG CGB GGC TGB G-3' (FRAG. NO: 1733) (SEQ. ID NO: 1744)

5'-CTC TGG GGT GGC CTT C-3' (FRAG. NO:1734) (SEQ. ID NO:1745)

5'-GCG CGG GCC GGG GGC TGC TGG G-3' (FRAG. NO:1064) (SEQ. ID NO:1074)

5'-GGT TGG CCC GGG GTG CCC C-3' (FRAG. NO:1065) (SEQ. ID NO:1075)

5'-GCC GCT GGG TGC CCT CGT CCT CTG CCG TC-3' (FRAG. NO:1066) (SEQ. ID NO:1076)

5'-GTG TCT CCT GGC TCT GGT TCC CC-3' (FRAG. NO:1067) (SEQ. ID NO:1077)

5'-GCT GCG CCC GTT GTC CTC TGG GGT GGC CTT C-3' (FRAG. NO:1068) (SEQ. ID NO:1078)

5'-GCT CCC GGG TCT GGT TCT TGT GT-3' (FRAG. NO:1069) (SEQ. ID NO:1079)

5'-TGG GGG TCC CTT TTT GGG CCT GTT GT-3' (FRAG. NO:1070) (SEQ. ID NO:1080)

5'-GGC GTG GCT TGT GTG TTC GGT TTC-3' (FRAG. NO:1071) (SEQ. ID NO:1081)

5'-TGC CCT GTC CTC CCG CGT CCC-3' (FRAG. NO:1072) (SEQ. ID NO:1082)

5'-CGG BGC CTC CCC GGG GCB GGB TGB CTT TTG BGG GGG BCB CBG BTG TCT GGG CBT TGC CBG GTC CTG GGB BCB GBG CCC CGB GCB GGB CCB GGB GTG CCG GCB GCG CCG GCC GGG GGC TGC TGG GBG CCB TBG CGB GGC TGB G-3' (FRAG. NO:1073) (SEQ. ID NO:1083)

**Human Vascular Cell Adhesion Molecule 1 (VCAM-1)**

**Nucleic Acid and Oligonucleotide Fragments**

5'-CCT CTT TCT TGT TTT TCC C CTC TGC CTT TGT TTG GGT TCG CTT CCT TTC TGC TTC TTC C CTG TGT CTC CTG TCT CCG CTT TTT TCT TC GTC TTT GTT TTC TCT TCC TTG CTG BGC BBG BTB TCT BGB TTC TGG GGT GGT CTC GBT TTT BBBB GCT TGB GBB GCT GCB BBC BTT BTC CBB BGT BTB TTT GBG GCT CCB BGG BTC BCG BCC BTC TTC CCB GGC BTT TTB BGT TGC TGT CGT-3' (FRAG. NO: 1735) (SEQ. ID NO: 1746)

5'-C TGT CGT-3' (FRAG. NO:1736) (SEQ. ID NO:1747)

5'-TGC TTC TTC C-3' (FRAG. NO:1737) (SEQ. ID NO:1748)

HSVCAM1A1: 5'-CCT CTT TTC TGT TTT TCC C-3' (FRAG. NO:1074) (SEQ. ID NO:1084)

HSVCAM1A2: 5'-CTC TGC CTT TGT TTG GGT TCG-3' (FRAG. NO:1075) (SEQ. ID NO:1085)

HSVCAM1A3: 5'-CTT CCT TTC TGC TTC TTC C-3' (FRAG. NO:1076) (SEQ. ID NO:1086)

HSVCAM1A4: 5'-CTG TGT CTC CTG TCT CCG CTT TTT TCT TC-3' (FRAG. NO:1077) (SEQ. ID NO:1087)

HSVCAM1A5: 5'-GTC TTT GTT GTT TTC TCT TCC TTG-3' (FRAG. NO:1078) (SEQ. ID NO:1088)

CTG BGC BBG BTB TCT BGB TTC TGG GGT GGT CTC GBT TTT BBBB GCT TGB GBB GCT GCB BBC BTT BTC CBB BGT BTB TTT GBG GCT CCB BGG BTC BCG BCC BTC TTC CCB GGC BTT TTB BGT TGC TGT CGT (FRAG. NO:1079) (SEQ. ID NO:1089)

**Human Endothelial Leukocyte Adhesion Molecule(ELAM-1)**

**Nucleic Acid and Antisense Oligonucleotide Fragments**

5'-BBG TGB GBG CTG BGB GBB BCT GTG BBG CBB TCB TGB CTT CBB GBG TTC TTT TCB CCC GTT CTT GGC TTC TTC TGT C CGT TGG CTT CTC GTT GTC CC TGT GGG CTT CTC GTT GTC CC CCC TTC GGG GGC TGG TGG GGC CGT CCT TGC CTG CTG G GTT CTT GGC TTC TTC TGT CCG T TGG CTT CTC GTT GTC CC TGT GGG CTT CTC GTT GTC CC CCC TTC GGG GGC TGG TGG GGC CGT CCT TGC CTG G CCTGAGACAG AGGCAGCAGT GATACCCACC TGAGAGATCC TGTGTTTGAA CAAGTGCTTC CCAAAACGGA AAGTATTTCA AGCCTAAACC TTTGGGTGAA AAGAACTCTT GAAGTCATGA TTGCTTCACA GTTCTCTCA GCTCTCACTT TGGTGCTTCT CATTAAAGAG AGTGGAGCCT GGTCTTACAA CACCTCCACG GAAGCTATGA CTTATGATGA GGCCAGTGCT TATTGTCAGC AAAGGTACAC ACACCTGGTT GCAATTCAAA ACAAAGAAGA GATTGAGTAC CTAAACTCCA TATTGAGCTA TTCACCAAGT TATTACTGGA TTGGAATCAG AAAAGTCAAC AATGTGTGGG TCTGGGTAGG AACCAGAAAA CCTCTGACAG AAGAAGCCAA GAACTGGGCT CCAGGTGAAC CCAACAATAG GCAAAAAGAT GAGGACTGCG TGGAGATCTA CATCAAGAGA GAAAAAGATG TGGGCATGTG GAATGATGAG AGGTGCAGCA AGAAGAAGCT TGCCCTATGC TACACAGCTG CCTGTACCAA TACATCCTGC AGTGCCACAG GTGAATGTGT AGAGACCATC AATAATTACA CTGCAAGTG TGACCTGGC TCTAGTGGAC TCAAGTGTGA GCAAATTGTG AACTGTACAG CCCTGGAATC CCCTGAGCAT GGAAGCCTGG TTTGCACTCA CCCACTGGGA AACTTCAGCT ACAATCTTTC TGCTCTATC AGCTGTGATA GGGGTACCT GCCAAGCAGC ATGGAGACCA TGCAGTGTAT GTCCTCTGGA GAATGGAGTG CTCCTATTCC AGCCTGCAAT GTGGTTGAGT GTGATGCTGT GACAAATCCA GCCAATGGGT TCGTGGAATG TTTCCAAAAC CCTGGAAGCT TCCATGGAA CACAACCTGT ACATTTGACT GTGAAGAAGG ATTTGAACTA ATGGGAGCCC AGAGCCTTCA GTGTACCTCA TCTGGGAATT GGGACAACGA GAAGCCAACG TGTAAGCTG TGACATGCAG GGCCGTCCGC CAGCCTCAGA ATGGCTCTGT GAGGTGCAGC CATTCCCTCG CTGGAGAGTT CACCTTCAAA TCATCTGCA ACTTCACCTG TGAGGAAGGC TTATGTTGC AGGGACCAGC CCAGGTGGA TGCACCACTC AAGGGCAGTG GACACAGCAA ATCCAGTTT GTGAAGCTTT CCAGTGCACA GCCTTGTTCCA ACCCGAGCG AGGCTATG AATTGTCTTC CTAGTGCTTC TGGCAGTTTC CGTTATGGGT CCAGCTGTGA GTTCTCCTGT GAGCAGGGTT TTGTGTTGAA GGGATCCAAA AGGCTCCAAT GTGGCCCCAC AGGGGAGTGG GACAACGAGA AGCCACATG TGAAGCTGTG AGATGCGATG CTGTCCACCA GCCCCGGAAG GGTTTGGTGA GGTGTGCTCA TTCCCTATT GGAGAATTCA CCTACAAGTC CTCTGTGCC TTCAGCTGTG AGGAGGGATT TGAATTATAT GGATCAACTC AACTTGAGTG CACATCTCAG GGACAATGGA CAGAAGAGGT TCCTTCTGTC CAAGTGATAA AATGTTCAAG CCTGGCAGTT CCGGGAAAGA TCAACATGAG CTGCAGTGGG GAGCCCGTGT

TTGGCACTGT GTGCAAGTTC GCCTGTCCTG AAGGATGGAC GCTCAATGGC TCTGCAGCTC GGACATGTGG AGCCACAGGA  
CACTGGTCTG GCCTGCTACC TACCTGTGAA GCTCCCACTG AGTCCAACAT TCCCTTGGTA GCTGGACTTT CTGCTGCTGG  
ACTCTCCCTC CTGACATTAG CACCATTCTT CCTCTGGCTT CGGAAATGCT TACGGAAAGC AAAGAAATTT GTTCCCTGCCA  
GCAGCTGCCA AAGCCTTGAA TCAGACGGAA GCTACCAAAA GCCTTCTTAC ATCCTTTAAG TTCAAAAGAA TCAGAAACAG  
GTGCATCTGG GGAAGTAGAG GGATACACTG AAGTTAAACG AGACAGATAA CTCTCCTCGG GTCTCTGGCC CTCTTGTGCT  
ACTATGCCAG ATGCCCTTAT GGCTGAAACC GCAACACCCA TCACCACCTC AATAGATCAA AGTCCAGGAC GCAAGGACGG  
CCTTCAACTG AAAAGACTCA GTGTTCCCTT TCCTACTCTC AGGATCAAGA AAGTGTGGC TAATGAAGGG AAAGGATATT  
TTCTTCCAAG CAAAGGTGAA GAGACCAAGA CTCTGAAATC TCAGAATTCC TTTTCTAACT CTCCCTTGCT CGCTGTAAAA  
TCTTGGCACA GAAACACAAT ATTTGTGGC TTTCTTTCTT TTGCCCTTCA CAGTGTTCG ACAGCTGATT ACACAGTTGC  
TGTCATAAGA ATGAATAATA ATTATCCAGA GTTTAGAGGA AAAAAATGAC TAAAAATATT ATAACTTAAA AAAATGACAG  
ATGTTGAATG CCCACAGGCA AATGCATGGA GGGTTGTAA TGGTGCAAAAT CCTACTGAAT GCTCTGTGCG AGGGTTACTA  
TGCACAATTT AATCACTTTC ATCCCTATGG GATTCAAGTC TTCTTAAAGA GTTCTTAAAG ATTGTGATAT TTTTACTTGC  
ATTGAATATA TTATAATCTT CCATACTTCT TCATTCAATA CAAGTGTGGT AGGGACTTAA AAAACTTGTA AATGCTGTCA  
ACTATGATAT GGTAAGGTT ACTTATTCTA GATTACCCCTC TCATTGTTTA TTAACAAAT ATGTTACATC TGTTTTAAAT  
TTATTTCAAA AAGGGAAACT ATTGTCCCT AGCAAGGCAT GATGTTAACC AGAATAAAGT TCTGAGTGT TTTACTACAG  
TTGTTTTTTG AAAACATGGT AGAATTGGAG AGTAAAAACT GAATGGAAGG TTTGTATATT GTCAGATATT TTTTCAGAAA  
TATGTGGTTT CCACGATGAA AAACCTCCAT GAGGCCAAAC GTTTGAACT AATAAAAGCA TAAATGCAAA CACACAAAGG  
TATAATTTA TGAATGTCTT TGTTGAAAA GAATACAGAA AGATGGATGT GCTTTGCATT CCTACAAAGA TGTTGTCTCAG  
ATGTGATATG TAAACATAAT TCTGTATAT TATGGAAGAT TTTAAATTCA CAATAGAAAC TCACCATGTA AAAGAGTCAT  
CTGGTAGATT TTTAACGAAT GAAGATGTCT AATAGTTATT CCCTATTTGT TTTCTTCTGT ATGTTAGGGT GCTCTGGAAG  
AGAGGAATGC CTGTGTGAGC AAGCATTAT GTTTATTTAT AAGCAGATTT AACAATTCCA AAGGAATCTC CAGTTTTAG  
TTGATCACTG GCAATGAAAA ATTCTCAGTC AGTAATTGCC AAAGCTGCTC TAGCCTTGAG GAGTGTGAGA ATCAAACTC  
TCCTACACTT CCATTAACCTT AGCATGTGT GAAAAAAGG GTTTCAGAGA AGTTCTGGCT GAACACTGGC AACGACAAAG  
CCAACAGTCA AAACAGAGAT GTGATAAGGA TCAGAACAGC AGAGTTCTT TAAAGGGGC AGAAAACTC TGGGAATATA  
GAGAGAACAA CTACTGTGAT CAGGCTATGT ATGGAATACA GTGTTATTTT CTTTGAAGT GTTTAAGTGT TTTTAAATTT  
TATGTAAGT GCATTAGAAA TTAGCTGTGT GAAATACCAG TGTGGTTTGT GTTTGAGTTT TATTGAGAAT TTTAAATTAT  
AACTTAAAT ATTTTATAAT TTTTAAAGTA TATATTTATT TAAGCTTATG TCAGACCTAT TTGACATAAC ACTATAAAGG  
TTGACAATA ATGTGCTTAT GTTT GATCAAAAT TTTACCTATT ATGCATTGA TATATAATA AGTATATAAA  
TGCACACACA GACACAGCAA TGATGGTGAA CAGTCTTCAT ACAATTATAT GGATGAATCT CATAAAATGC TGAGTTAAAG  
AAATCAGACC AAAGAACATA TACTGAAAGA TTCTCTCTAT ATACAAAGTT CAAAAATAGG TGGACCAAT CATGGTGGTG  
TTAGAAATCA GAAGAGGGC TACCTTTGTG GGGAGGGGAC AGTTTAAATGC CCAGAAAGCG TAAATAAGGA ATCCTCTGGG  
GAGTGGTAAT GATCTGGATG CTGGCTACAG GATGTGTTGG TTGTAATAAT GCATTTTTT ATATCTAGCT TTTCCATGT  
GTATATTATA CTTCAAAGAA GTTCAGTTAA TAATTTCTCA TGCTACTGTA GAGTAGCTCA GTTAGCCCCA GCAAGCCTCT  
GGCTTAATCT TGTTTTACCT TAAGCCATCA GTCATTTACA AGTAGGAAAA TTCACAGGGA AAGTTAGAGT ATAAATCCA  
GAATGAAGGT TACTGGGTG AGAGTCTCTC CATTTTCCAA AGCCCGTTTA TTTCTTGATT CCAGTTCTTA AGAAGTCTCA  
GCATTGTGTC TTTTTCATGT ATCTTACAAG AAGACAGCAT GTGCTTCTAA CACCTGATAC ATTGTATCTA CCAGCACTTG  
GTAAACAGAA AAGAACCACA TTTTCTGT AGGAGAAAT TGGTGCTAT TTTCTACAG GCACCAATTA TGGGACCAA  
TAGGTGGGAT TAAAGATACA GTAGAAAGTA TTTAAACTT GCCAGGGGGC AATAGTCTGA AAATAAGTAA ATTGGTGCTA  
TAGAATGGAA GTTACAGGCT TCTTCTTTT TTCCACAAG ATCTGCTCT TGAGCCCTA GAGACTTTTC TGTCTGTTAC  
TGTTCTTCA TTCCTCATCT GCAGAGCCAG CCTGAGAAG TGCAGACCAA AGCCAGGGAA GGCTCTGCAA AGATGTACAA  
ATGGAAGTCA CCTAATAAC CTCTGACTGC TGCACATAAT ACATTTCACT CAAAAGAGGG GTTAAACAAT GGAACAGAAT  
ACAGAGGCCA GAAATAATGC TGAACACTGA CAACCATCTG ATCTTGACA AAATCCACAA AAACAAGCAA TGGGAAAGG  
ACTCCCTATT CCATAATGGT GCTGGGATAA CTGTCTAGCT ATATACAGAA GATTGAACCT GGGCCCTTC CTACATCAT  
ATACAAAAAA TAACTCAAGA TGGAGTAAAG ACTTAAATCT AAAACCAAAC ACTATAAAAA CCTGGAAGA TAGCCTGGGA  
AATACCATTG TGGACATAGG ACCTGGCAAA GACTTCATGA CAAGACACCA AAAGCAATAG CAACAAAAAC CAAATTGACT  
AATGAACTA ATGAACTCT TTAGTTGTAC AACAGATAGT TTATCTGTAC AAAAAATAA ACTATCAACA GAGTAAACAA  
CCTACAGAAT GAAAAAATTT TTTGCAAACT ATGCATCTGA CAAAGGTCTA ATATCCAGAA TCTATAAGGA ATTTAAACAA  
ATTTACAAGC AAAAAATGA CCTCATTAAA AAGTGGGCAA AGGACATGAA CAGATGCTTT TCAAAATAAG ACATTACAC  
ATCCAACAC CATATGAAAA GATGTTTAA ATCACTAATC ATTAGAGGAA TACAAATCAA AAGCAATAA AGATTACATC  
TAATACCAGT AGGAATGACT ACTATTAATA AGTCAGACAA TAACAGATGC TGGTGAAGGT TGTGGAGAAA AGGGAATGTT  
TATGCACTGC TAGTGGGAAT GTAACTAGT TCAGCCATTG TGAAGAGAG TGTGGTGATT CCTCAAAGAA TGTAACCCG  
AACTGCCTTT CAATCCAGCA ATCCCATAT TGGATATACA CAAAAGGAA TAGAAATGT TTTACCGTAA AGGCGCATGC  
ATGCATATGT TCATTACAGC ACTATTTACG ATAGCAAAGA CATGGAATCG TCTAAATGCC CATCAGTGGT AGACTAGCTA  
AAAAAATAAT AATGTGGTAC ATATACATCA CAGAATAGTA TGCAGCCATA AAAATGAACA AGATCATCAT GTCTTTGCA  
GCAACATGGA TGTAAGTTGA GGCCATTATC CTAAAGCAAT TAATGAGGA ACAGAAAGCC AAATACCATA GTTCTCATT  
TATAAGTGAC AGCTAAATAT TGAGTACACA TGGACACAAA GAAGGGAACA ATAGACATGG GACCTACTTG AGAATAGAGG  
GTGGGAGGAG GGTGAGGATC AAAAAAGTACC CATAGGACAC TGTGCTTATT ACCTGGGTGA TGAAATAATT TGCACACCAA  
ACCCCTGTGA CACACAATTT ACCTATATAG AAAACCTGTG CATGTACCCC TGAACCTAAA AGTTAATGGT GGGGGGGTGG  
GGTTAAGCTA CTTTGTGGTA TAAATCTGAG CATTATATT AAAATAAAAT ATTTACCTCA TTAGAGTAAT TAACATTTAT  
TAAGCAAAGA GCCAAGTACC TTACACACAT GATGTTTAA CTCAATGA TCTTAACTC CATAACAACC GTCCATTGTA  
TGACATATG TGGAAATGA GCCTTGGAGA GATTAAATGC ATGGGGCATG CCATTGACT AGAACTGGA AGCATCAGGA  
TTTAAACTG GTTCTGAATG GTTTGTAGG CTGTTGTTT TCCACATTAT AGCATGGCT GCCATGAAGA ACAGGTCTCT  
TCTGGTGT TTTGTTGTTG GTTAAAGTGA AGCAATATT TATTAAATA TTCAAGATAT GCTGTAAAT TTTTACTCAA  
AAATTTGAGT ACAGTATGGA TCTTCTGAAG CCAATAACT CTTATTCAAT GCTTAGTTGA GAAATTTTAT GGAGTAGTTC  
TCAATTTTA TGTAGTTCCA CTGCAAGGT AAGTCTTATG GAAAGATTCA CTGTAATTTT TTTTCTCAT TTGACATCA  
GCTTTTCTT TTCTCAGAC CCGCTGAAAG ATAATTTTA AAATAAAAA CTGTTTITA TATCAAGTG GGACATTTT  
TCCAAATGAA AACCGTGTAT TCATTTTATA TGATAAAATC AATGTTATTA TTTTAAAAAT TTTGATTTAA AAATCATTA  
AAATAAATTT TCAGATATTA CTGAAATTC TACCATCCAG AGATAATAGT GCTTAAAGAT TTGATATATA GACACACACA  
CATATATACA TATATATCAT CTAACCTTC TTTGTATAAA TGTATATAAA GTTTTAAATA AAAACTAGGA GATTAATGCC

CTTTGAATGA AAATAAATAC AATGTGTATG CTTTAAATC TTGCTTTTAC TTTATAACAT TTATCACAGC AGTCATGAGA  
TAATGATTTA CATGGTCATT GTTAGTAAGC TAATAGCTAA GTGCATGAAC TCTGGAGCTA GCCTCCCTGG ATTTTAATCC  
CAGATCTGTC ACTGACCAGC TGAGCAATAC TAGGTAAATT GCTCTGTTC CTTAGTTTCT TCATCTGTAA AATAGAGATA  
AAAATAATAT CCACCTCATA GGATTGGTGT GAGCATTAAA TGAGCATACG TATGTAGGCC ACTTAACAA AATGCCTTCA  
CATACTGAAC ACAAATATAC GAGCTGTTGT CTTATTGGGC TCATGTTTTT CTAACCACTA ATGCCGATGC ATGCAAGGAC  
CATGTTGGTT TTGTTCCACA TTGCATCCCC AACCTGGTAT ACAGTGTGCA TTCAATAGTT GTTGACTATT ATTACTAGTG  
GCATTTAACA AATATCTGTT AAATGAGTGA AGAAATACCC ATTTACTGCA AGTGTGTCTA ATATTGATGG CATAATGGGG  
GAAACTCAAA CTCTGGAGTC AAACAGGTTT TAAAACCTTA TTCCCTCATC CTCAGTTATT GACGTTTTTT TTTTGGCAGG  
TGTGTGTGTG GGACAACTTA TTGAACTTTT CTGAATTTCC AGCTTCGCAT ATATAAAATA GAGATAGTGA TTCATTCTTG  
CAATGTATGG ATTTGAGACA ATTTGTAAAG TTTATCAATA AATAGTAGCT ATTTTGTAT AAGTATTACA TATAATATCC  
AGGCCACTGC TTTCGATAAC CCAAAAGGGG CACCATTTCAT GCAGAATACA ACATAAAATGG TGTCCCTGGA GCAGTGCAGT  
ATAGGAACCC TGAGGGGACC TACAGTATAC TTTATAGTTC ATAGATTACA AATTATCCCT TTATCAGAGT CTCTCAAGGT  
TGGATGTATT TGAGGTCCAT AAGAGCAATT TAGGATTAAC AGTAGCTGCA GAAACCATCT GCAGTGATAT TCTCATTTTA  
AATCCGCGGG AAAGAAGACA GCTATAAACT TGGGACCTGG GTTTAAGCAT TTTAAATGCC AAGTTCACCA TTTTCTAAAA  
CACAACAAAT ACCCAGTGAG AGAGGGAGAA GGAAGTAAA TGCTCTGAA TAAGCAAGTT AATGTCAGTA GTTGTACTGT  
ATGCATATTG ATGAACATA GAGGAACCAA TGTCATCA GATGAGCAGG ATATTGGCA ATAACAAGTT GCCTTTGAGG  
AAAAATGATT TTCTTGGCAA GTTCTTTATC AGCATTACAA AGCTAAAAGC TACGTTATC ATCACTTATA TAGCATACC  
CTGTTGTGCA AATGCTGTCT GTGTTTGCAT CTGCTATTGT TGATGCCTGG TGCATGAATC AGGACTCCAG CCCACAAGTT  
TTCCCAGAAC TTCTTATGG CCATCATCTT TAAGTGTCTG GTGAACAGTC ATAGTTTGGT ACACAAAAGG GTCAACCTGG  
GGGATGGCTA GGGTTTGAAT CAGTCGTAC ATTTCAATAG AGCAGGAAGG GGAATGGTG GCCTGTAACC TCAGGGAATT  
TTGCCAGTTG GTCCACCCCA CTCTCTCTCT CTGCTCTGA GGAAGTGGCA CAGCCTAGAA CAGCACCACA GGTGAGAGAA  
ATGCAAAACC TAACCAGAGA AGCAGACTCT TTGCCAGTAG TAATAGTTCA GGACCACCAC CAGCTTTTAT TAAAAATTTT  
AATAACACTA AAGTATTGGC AGAAAGAAAT AATCTTGGT TAACATAAC TAGAATATTG ACTCTTCTC TGTGGAAGAA  
TCAGCCAATC ACATTTGTTT ACATCAGTTC CCCTGAAGAA GAAAAATACA CTGATGTTGC AGCAAGACA AATTAAGCTA  
GATGTAAATA ACTTCTTTA GCCTGTAATG CTAGGCTAAT TACATATTGG AACTATTTT TCAGGGAAGA ATTGTGTAGG  
GTTTCAGGGA AGAATTCTGA AGAAAAATA GAGCTGAAAT GATCTTGCA CTCACTGAAA CTGCAGGGT TAGATCCACA  
CTGATACTCG TTCTATTATC ACTGTAATGA AGGCTGATGG AATAAGTAAA AATGTTTTGT ATTAGTATGT TTTTACACTT  
ATTGCAAGG CATAAATAGG TTAGGTTTTG ATCTTAATTT AATTCTAACA TGTATTGTGC ACAAGCTGTG AGCAGTTTTT  
AGGAGTATGG TATCTGGCCA TGACTGATTT TTCAGGATTT AATCATCTGG TAGAAGGGTC ATACACAATA GGAAGATGTG  
TGTGACAGGT TGTGATCATT ACTATAATCA CACAGAGAGC TGTAGAATTT TAGGCTGGCA GGGTGGCTCA GCCTGTAAT  
CCCAGCACTT TGGGAGGCCA AGGCAGGCGG ATCAAGAGGT CAGGAGATGG AGACCATCCT GGCTAACACG GTGAAACCCC  
GTCTGTACTA AAAATACAAA AAAAAAAAAA AGCCAGGCGT GGTGGTGGG GCCTGTAGTC CCAGCTACTT GGGAGGCTGA  
GGCAGGAGAA TGGCGTGAAC CCGGAGGGT GAGCTTGCAG TGAGCCGAGA TCGCATCACT GCAATCCAAC CTGGGCGACA  
GAGGGAGACT CAGTCTCAAA AAAAAAAAAA AAAAAAGTC ATGTTAGATC CAGAGGGGTA GCAACTGGGG CTGGGCTGTC  
AGTCAACTCA GTCAACTCAG TCAACTCTGC TCCCCCAG GAGATGCCAG TGATGCATT TCATGGCCAA CATTGTCAGT  
CAGCATCATT GAATTACTCC TGATTATAGA GACACAGCTG CAAACGATTC CCCATTAAAT ATGATGTTTC TTGCAATGTT  
TGGAAGGTAC TCCTTTTATG TAAGGGAAT CCCCTCTCT GGCTTGTGTA AAGTTTTTTC TTCCATTTT AAAAATCGTG  
AATTCCTTTT TGCAATATTG AGGTGGTTAT ATGGTTTCTC TTCTCTAATC TGTTAATATG GTGATTTAAT GGTAGAAAT  
TTTCTAATGT AAATTCCTAT CATATTGCAG AAATAAACCT AAACAGGCA TGAGGCTATA TTTTATTAT TCTCTATAT  
TTGTTGTCTA TACAGTATTA TGTTTAAGAT TTGTTACAT ATATTGTGA ATGGGATTGG ACTATTTTC CTCTGTCCG  
ATTTTATCT GGTTTTAAA TTAAGGATAT TTTAGCTTA TGAAATATT GGCAACAAT CCTTGGCAAG TAATTTTTTG  
GGGAATTTGT TTTGGCTATT TTGAGTATTA CCCAATATAT TTAATTAAG TTATCTTAA TGTTTTCTTA ATTAAAAAAA  
TTACCTACTC TAGAGATATT CTTTATGTAC TCCAGATTT GTCTATTTAT ACCACTTTTC TTTTCTCTC GATGAGTGTG  
ATAGATGTTT ATCTATTTT TTATCTTCTT TGATCTTCTC TTATTCCTG TTTCTATTAA CTCTGAAGT TTATTATTT  
CTTTTTCCA CTTCCTTATG GTTATTCTT TCAATTTTC TCTAATCTT TAAGTTGGGT GTTAAATTT TAGCTGTCTT  
TGCTTTTTTA GGATAAGCAT TAAACTACA AATTTCTCT GTTATTCTT TGCTGCACC CAAATTGTTG ATATTCTAT  
TGTCTAATTT CTATTCATTT AGAATACTTT AAAGTTTCT TTTGTTTTT AAAAACTAAC TTTTAAAT GACAAATAAA  
AATTGTGTAT ATTTATTGTG CACAGCATAT GGCTTTGAAA TTGATGTACA TTGTGGAATG GCTAAATTTA GCTTATTAAT  
GTATGCATTA TCTACATAC TTATCATTTT TTGTGGTGAG AGCTATGTGA CTTTGAACCT TATGAGTTAT TTAATATTTT  
TTAAATTAAT AAGCATATTG GGATTTAAG TAATTTACCT TTTTATTATT AACTATAAC AAGTAGAACA GTTAACCTGT  
ATGATTCTAC ATCATGAAA TTTATTGACA TTGCTTCAT AGTCTATTAT ATGGTCTACT TTGTTTCATG TTACATCTGT  
AGTAGAATTG GCTAATAGTT GAGTAAAGTA CACATATGTC TATGAAATCA AGTGTAATCC AGAGAAAAAG AGAAATTTAC  
TGAATATATT GTTCTAGGTG CTATTATATG TTGTCATGTT TAATCCTCAC CACAATTGTA TGAGGCAGCC ATAATTAAT  
CCACTTTACA CATGAGGAGC CTGAGGGTTA AAAAAAAGC TAGCTCTACT ATTTGTAAAG AATGAAGCAA AGATACAAAT  
GAAGGCCAC ATATCTTATA ACTAGATATT TAAGCATTTT AATTCAAGCT TAAAACTGC TAAATAAAAT GTGCTCCAAT  
TTCTATATTG ACAGACATAC CTTCCTAATG AGCTGGGGT CGAATTTAGA AATCTTGTAT GCTTCAGAGT CCACACTGAA  
ATGTGGAGGC ACATAGTGAG TTGGTCCCCA GCCTTCAGTC CACCACCTT CTCTTACTA AATCACCCTT CACATACATG  
TATGAACACC CCAGCCTCCA AGTCCAAACC CTAAACAAA TGGGACACCC TTGTGCATAC ACAGAGACAC AGCCCATCCT  
CAGGAAAAAC TGGAAAAGTC CATACAAGTT CTGGAAGCAA GCTTGGGACG GTTTCAGTAG TGTGGTCTAT AAGGGAGGCC  
TCAGAAGACA GGTTTTCTTA ATTCTGTGAA CTCTCCAC AGTGAAGAGG GTGCTGGAGG AGGGTCAGAG TGAGGACTTC  
TAAAGCATGG GTCCTGAGTA GGGGCCACTC TTGCCAAGT CTAAGAAGGG TACTAGAATA GCACACTACT ACTAGATACT  
AGAACCCAGA TACAAGCACA GGTCTTCTGA AATTAATAAT AATAATAACT ATTACCATTA TTATACCAGT AGCTGTCTAT  
TATTAGTGC TTATTATTG CCAGTCACTG TTCTAAATTC TTTACATGTA TTATACAACT GCCATATAAC TGCCATATGA  
GGGATGTACC CTCATTGTCA CCATTTTACC GATGAGAAAA CTGGCATAAA ACGTTTAAGT AACTTGTCCA AGTTACAGAG  
CTTAGTGAAG CCACAATGTT GCTCAATTTG CTCTCAAACT TCAAAGGGAT GGAAGGACA CCTAAGTCAT AGAGTCTTTA  
AGAATCAGAG CTAGAAGGAA TCTTAGATGT TATCTAGTCA GCCTCTCCC ATTACAGTCC AAGAGAAGAT GGCCCTGAGT  
TACTTGTAGC TATTTTGTGA TGTGAATTGC AAGTGAATAT ACATTTCTACT GAAGATAAAA GATATTTAAA GATATCGCTG  
GATATAGGAA CAGTGGTTTT AAATCTCTAG GCTTTAACTT TTCTCAGAAC AAGAAATCCT TTTTGGTTTT AATCTATATG  
CACATCTGTA TTTTCTCAA TTATCGGGTA GTAAATATA ACTTTTCTTC TGTAATATTT TTTAACTTTA ATGAGTGTTC

CTCATAATAG AAAAGTTTGG AAACCATTGC TATGGGTATA TACTTTCTAA AGGGATAGTA ATTTCTCTAG AATATTCATT  
TAATGCTCCA GAAGTAATTA GCACAATTGT GCAAGTCTGT GCATCATCAA CTATACATTC TGCTGTGTTA CTCCAAATCC  
ACATGAAACT GATTATACAG TCAAAGGCGA GCCCAGTGGA GAGGCATTTT TGGAGACTTC CTGGTACATT GAGACAGGGT  
CGGCCAGTCT GCGTTAGGGT CTTGGTCAAA ACTGCATTTT TGAAACTAAA CTCAGATTGC TTTCTTTTAA GGGGTCAGAA  
CTGATTCAAA TCTACATTTT TAAAAGCCTT AGATGTGGGG CTTTTCTAT TCCAGTCTC CGCTATTGGT CTTTGTGAAT  
CCACAGGCAA TTTGGCCACA TCCTTGACTC TCTCTATAT TAAGAATTAA ACAGCTAAGT TCATGCAGAG GAAATATAAC  
AAAGGAGGGA CTTTCTTACA AGATCTTTGA AAAATGGAAC ATTTGCATAA GTCATATTTA GCCAGAAGT TGTGTTTATA  
TTTTCTTTC TGAATACTTT GTTACACCTC CTCCAGCCA ACCCCCCC TCCCTGACCC CAAGTAGTCA GAGACCAAAG  
CCTTCACAAT GGTITACACT TGAACCTTCC TGCCCCCACC CTCATCATCA CGCTGAATA ATTACATTCA CTGACTGGTC  
TCCCCTGCTT CCGTTTATCT CCACTCCTAA ACCCTCTGAC ACCTTAATCT TCCAGAATA CCATTGTGAT CTGTTCCAC  
TCTTGCTCAA GTTTTCCCAG AAAGTAGAGT ACAACTTTA TAAGCTTTAG AGTTGAAAGC CACTCTATCT CTTTTCATC  
CCCAGGTCTC TGCCAAGGCA GTATAACCTG TCCAACATCT CTAAGTTCAA TACCTTTGTC TTAGATACTA GACTCTCCTC  
CTGGTTTCTA ATTAACCTG ATCTAGGATC TAATTTTGCC TCTGAATCT GTTGCCCTTT GCCAAGTGAT CTCTCCTCC  
TCTGAGCCGC AGCATCTCTG AGCTTGACA CTTAGCATAG CCATAGCACA CACAGCCTTA GCTTGAGTT CAGGGTGTGTT  
ACCTTCCCTC CCTTCCAGA TGCTGGATCC CCAGGGATAG GAACTCTGCC CTATGTGTG CATAGCCCTT GGTAGTATGT  
CTTGAGTGC TACATTTTCA GCAAAATGTT AATTGGTTAA TTGAAGACAA CTGTCCTATG CCTAAGCCT CTCTTTTGC  
TAAACATGCC TGTGCTCTT GTCAATTGAAC AACTATTTT ATCTATTTT TCCTGACAT AGGGGTGAGT TCCGAGGATG  
CTGAAATCAA GAGACATAGC TTATCTCTC AAAATGTCT TCAAGAGTGA TTTGTTGTG AATTGAGAAC TGGCTGCTA  
CTTTGGACT ACCCACTTCA GCAAGAGTGT TTGAAACCAA ATCTATTCTA AGTAATTTT TATTCCTTT TCTATGTC  
ATTAGACACA CAGCTCTTTT AAAGTACCT TCGTTATCTA TTAACAGAC ATTCAGTAAC TCTATAGACA CTGCTAGCT  
ATATGAACCT AGACAACTA ATATCTCTGA GCTTCAGTTT CTAAATTTT AAAATGAGGA CAATACCATC TATGGCCGGG  
GATTAATGC TATGAGGAAT GTAAACCAGA TGTCAGGTAC CATCTCTCTA AAATCCAGAT AAAATGAATT AAAAATACTG  
GCCGCAACC CTCTTAAGA GTTCTCAAAA TTCTCAGAGA GCTTAATTTT CATGCTCACC ATAGCACCCTA TTTCTTCTA  
AATATTTGT TTTACCAA ATATTTTGT CCAATTTTGC CTTTATGTC TATTTCTCA TATCCACTTA CCCAACTAA  
AGAAGCAGCC CTTTACCTT AAAGTCTCTC TCAAGGCAA CTAATATCA GGTCTGGGT TGTATCTTA TGGGATGTT  
ACAGAGGTTA GTGTGATGCA GAGGAGGAGT CATGCTGTTT AAATCCATAC TAGTCCCTAG AGGCCAGGCT GCTTCTGCCA  
CCCCTACCC TCCGCCCACA GAGCTCTTCA GCTTCTACA TTTCTAGTTC TTTCTCTCT ACTTTCATTA CTTCTCTCT  
TTTTTTTTT CTTCTCATGT GCTCAGGGA GCAGAGAAAA TTAATCTCTC TAAGTTTTCT TAACACAGAG TGCCTTAATT  
ACATATTACT ATTGTTTGTG TCCCTGCCAA CACTACGCT GTAGGGTAC ACCTGTATA TTAGAGGCT ATCAAAAAA  
GATAGCTTC TCCTAAAAAG GGATTTGGAT GCTCACTAAG ATAAGTGGAT GCCAAGATAA GTTTAACTA ACAAACTTTA  
TTATTATTAT TATTATTAT ATTAGATA GGTACTATT GTTCACTCA GACTGAGTCA CAGGATGCA AATAAGCTC  
ACTGCAGCT CAAAGTCTG AGTTCATGCA ATCTTCTGC TTCAGTCTC TGAGTAGCTA GGAATACAG CATATGCTAC  
TCTGCCAGC TACTTTTAAA AAAATAATTA GGGATGGGGT CTGTTGTAT TGCCAGGCT CGTCTCAAAC TTCTGGTTT  
AAGCAATCCT CCGCTTTT ACCTCCTAA TTGTTGGAGT TACAGGCATG AGCCACAGCA CTCACCAAG ATTTAAAAAC  
TTTTAAAGA AATCACATTA CTTACTGTTA TCATCATAT GGTACTACC AGTGTAAAA CAATTGGTAT TGAAACACC  
ACTACAGAT CAAGCTTCAA ACCAAGATGT CAAGTAATA TATTGTGAG ACCTCTGAGC CCAAGCTGC AGGTATACAC  
CCAGATGGCC TGAAGCAAGT GAAGAATCAC AAAAGAACTG AAAATGGCCG GTTCTGCTT TAAGTATGA TCTTACCA  
TTGTGATTTG TTTCTGCCC ACCTTGACTG AGGGATTAAC CTTGTGAAAT TCCTTCCCT GGCTCAGAAG CTCCCGACT  
GAGTACCTTG TGACCCCCAC CCCTGCCAC AAGTAAAAA CCCCCTTGA CTGTAATTTT CCACTACCA CCCAAATCCT  
ATAAACAGC CTCACCCCTA TCTCCCTCG CTGACTCTCT TTTAGACTC AACCTGCTG CACTAGGTG ATTCAAAAGC  
TTTATGCTC ACACAAAGCC GTTTGGTGG TCTTTCACA CAGACCATGT GACATTTGGT GCCGTAATC AGATCGGGGA  
ACCTCCCTTG GGAGATCAGT CCCCTGCTC CTGCTCTT GTCTCATGAG AAAGATCCAC CTATGACCTC TGGTCTCAG  
ACCAACCAGC CCAAGGAACA TCTACCAAT TTTAAATTGG TGAAGTGGCC TCTTTTACT CTCTCTCCA GCTCTCTCA  
CTATCCCTCA ACATCTTTCT CTTTCAATC TTGGACCAC GCTTCAATCT CTCCTTCCC TTAATTCAG TTTCTTCTT  
TTTCTGTTAG AGACAGAGGA AACGTGTTCT ATCTGTGAAC CCAAACTCC AGCACTGGTC ATGGACTGG AAAGACAGTC  
TTCCCTGAT GTTTAATCAC TGCAGGGATG CTTGCTGAT TATTCACCA CATTTCAGAG CTGTCTGATC ACTGCAGGGA  
CGCTGCTG GATCCTTCA CTTAGTGGCA AGTACCATT TGCTGGGTG GCAAGCACA CTTCTCTGG GGGGCAAGCA  
CCACCTTCC TGGGGGGCAA GTACCCCCCA ACCCTTCTC TCCATGCTC CACCTCTCT TCTCTGGGT TGCTCTCTC  
ACTATGGCC ACCTTCCACC CTCAATCTC CTCTTTCTC TCTAGCTG TGTCTCAAG AACTTAAAC CTCTCACT  
CACGTCTGAC CTAACCTA AATGCCTTAC TTTCTTCTG AATACCGCT GACCCCAATA CAACTCAAC AATGGTTCCA  
AATAGCCTGA AACGGCACT TTCAATTTCT CCATCCACA AGATCTAAAT AATTCTTGT GTAAATGGA CAAATGGTCT  
GAGGTGCTG ACATCTGGG ATTCTTTTAC AGTCTGGTCC CTCCTAGTC TCTGTTCCA ATGCAACTCA TCCAAATCC  
TCCTTCTTC CTTCTGCT GTCCCTCAG TCCCAACCC AAGTGTGCT GAGTCTTTC AATCTTCTT TTTACTGAC  
CCATCTGACC TCTCCCTCT TCCAGACT GCTCTCTC AGGTGCTCC CCGCCAGGCT GAATCAGGCT CCAATCTCT  
CTCAGCTCC GCTCTCCAC CTTAATCT TCTATACC TCCCTCTC ACACCTGTC CAGCTTACAG TTTCTATCTG  
TGACTAGCCC TCCCCACCT GCCCAACAAT TTTCTTAA AGAGTGGCT GGAGCTAAAG GCATAGTCAA GGTAAATGCT  
CTTTTCTT TATCAACCT CTCCATCTC AGTTAGTATT TAGGCTTTT TTTATCAAT ATGAATACCT AGCCACTCC  
ATGGCTCATT TGGCAGCAAC TCTAGACAT TTTACAGCT TGGACCCAGA GGGGCCAGAA GGTCTCTTA TTTCAATAT  
GCATTTTATT ACCCAATCA CTCCAACAT TAGAAAAAG TCCAAAGTT AGACTCCGG CCTCAAACCC CACAACAGGA  
CTTAATTAAC CTTGCTTCA AAGCGTACAA TAATAGAGTA GAGGCAGCCA AGTAGCAACA TATTCTGAG TTGCAATTCC  
TTGCTTCCAG TGTGAGAGAA ACCCAGCCA CATCTCCAGT ACACAGAAAC TTCAAAATG CTAAGCCACA GTGGTCAAGC  
ATTCTTACAG GACTCTCTC ATCAGGATCT TCTTCAAGT GCCAGAAATC TGGCCACTGG GCCAAGGAAT GCGCTCAGCC  
TGGGATTCT CTAAGCCAT GTTCCATCTG TGTGGGACCC CACTGGAAAT CGGACTGTCC AACTTGCCCA GCACCACTC  
CCAGAGCCC TGGAACCTCT GCCAAGGCT CTCTGACTGA CTCCTTCCA GATCTTCTG GCTTAGTGGC TGAAGACTGA  
TGCTGCTGA TCGCTCAGA AGCCTCTGG ACCATCACAG ATGCTTTTG TAACTCTTAC AGTGGAGGGT AAGTCCGTC  
CTTCTTAAT CAATGCAGAG GCTACCACT CCACATTACC TTTCTTCAA GGTCTGTT CCCTTGTCT CATAAATGTT  
GTGGGTATTG ATGGCCAGGC TTCTAAACCC CTAAAACTC CCAACTCTG GTGCCGATT AAACAACATT CTTTATACA  
CTTCTTTTA GTTATCCCA CTGCCCAGT TCCCTTATA GGCTGAGACA TTTAACCBA ATTATTTGCT TCCCTGACTA  
TTCTGGACT ACAGCCACAT CTCATTGCTG CCCTTCTCC CAACCAAAA GTGGCAACT CTTTGCCACT TCCTCTCATA

TCCCCCTACC TTAACCCACA GGTATGGGAC ACCTCTACTC CCTCCCTGGC AACAAATCAC ACCCTCATT A CTATCCCATT  
AAAACCTAAT CACCCTTACC TGGGTCAACG CCAGTATCCC ATCCCCACAAC AGGCTTTAAA GGGATTAAAG CCTGTTATCA  
CTTGCTGTT ACAACATGTC CTTTAAAGC CTGTAACTC TCCTTAAAT TCCCCCATTT TACCTGTCCA AAAACCTGGAC  
ATGCCCTACA GGTTAGTTCA GGATCTGTGC CTTATCAACC AAATGTCTT GCCTATCCAC GACATGGTGC CAACCCATA  
TACTCTCCTA TCCTCAATAC CTCCCTCCAA AACCCCTCCA TAACCCTTAT TCTGTTCTGG ATCTCAAAAC ATGCTTTCTT  
TACTATTCAT TTGCACCTT CATCCCAGCC TCTCTTACT TTCACTTGA CTGACCCTGA CACCCATCAG CCTCAGCAAC  
TTACCTGGGC TGTACTGCCG CAAGGCTTCA TGGACAGCCC CCATTACCTC AGTCAACCCA AATTCTTCT TCATCCATTA  
CCTATCCAGG CATAGTTCTT CATGAAAACA CACGTGCTCT CCTGTCTGAT CATGTCCAGC TAATCTCCCC AACCCAGGA  
CTGGCAAATT GACTTTACTC ACATGCCCCA AATCAGGACA CTAAGTACC TCTTGGTCTG GGTAGACAT TTCACTGGAT  
AGGTAGATGC CTTTCCACA GGGCCTAAGA AGGCCACCGT GGTCATTCT TCCCTTCTGT CAGACATAAT TCCTTGGTTT  
GGCCTTCCCA CCTCTATACA GTCTGATAAT GGACAAGCCT TTAGTATCA AAGCACGCAA GCAGTTTCTC AGGCTCTTGG  
TATTCAGTGA AACCTTCATA CCCCTTACCG TCCTCAATCC TTAGGAAAGG TAGAACTGAT TAATGGTCTT TAAAAACAC  
ACCTCACAA GCTCAGCTC CAACTTAAAA AGGACTGGAC AGTACTTTA CCACTTGCCA TTCTCAGAAT TCGGGCCTGT  
CCTCGAAATG CTACAAGTA CAGCCCATTT AAGATTCTGT ATGGACGCTC CTTTTATTA GGGCCAGTC TCATTCCAGA  
CACCAGCCCA ACTTGAAGT TGGCCCAAAA ACTTGTCATC CCTACAATCT TCTGTCTAGT CATACTCTA TTCACCATTC  
TCAACTACTT GTAAATGCC TGGCCTTTT TACAGTCTG ATTTATCTT TTCTCCAA CCATCATAAC TGATATCTCC  
TGGTTTTACC TCAAACGCC ACCCTTAAAGT CTCTTTAAA GTGGATAGAA GATCTTCAGT GACAAGGTAC ACTCCAATAC  
TTTCAACCTA ATAAAGCCCT ATTCTTACT TTTATATTCA CTCTATTCT TGTTCCTATT CTTATGCCAC TCTCTACCTC  
TCCCCAGCTA TCTCCACCAC ACTATCAATC TCACTACTC TCTCTAGCC ATTTCTAATC CTTCTTAAAC AAACAATTGC  
TGGCTTTACA ATTTCTCTT CCTCCAAAAT CACCGAGTCC TCAATTTACT CACTGCTAAA AAAGGGGACT CTGCATATTT  
TAAATGAAG AGTGTGTTT TTACCTAAAT CAATCTGGCC TGGTATATGA CAACATAAAA AAACTCAAG GATAGAGCCA  
AAAACCTTGC CAACCAAGCA AGTAATTATG CTGAACCCCT TGGGCACTC TAATTAGATG TCCTGGGTTT TCCCGATTCT  
TAATCCTTA ATACCTGTTT TTCTCTTCT CTTATGCA CTTGTGTCT TCCATTGT TTCTCAATT ATACAAATCC  
GTATCCAGGC CATCACAAT CATTCTATAC GACAAATGTT TTAAGGGAGG AGACCACCC TCATATTGTC TTATGCCCAA  
TTTCTGCCTC CAAAGAAAG AGTAAAAATG AAAAGGCAGA AATGAAATCC ACAGGCAGAC AGCCTGATGC CACACCCTGG  
GCCTGGTGGT TAAGATCAAC CCTGACCTA ATCAGTTATG TTATCTATAG ATTACAGACA TTGTATGGAA AAGCACTGTG  
AAAATCCCTG TCTTGTCTG TTCTCTAAT TACCAGTACA CGCAGCCCT AGTCATGTAC CCCCTGCTTG CTCCCCCTGC  
TTGCTCAATC ATGTAGACC CTCTCAGCA CACCCCTTA GAGTTGAAG CCCTTAAGAG GAAAGGAAT TGTTCACTCG  
GAGAGCTCGG TTTTGTAGAC ATGAGTCTT CCAATGCTCC CAGCTGAGCA CTTGTGACC CCCACCTT TCTTTAAT CAGTCTGA  
GGGTTTTGT CTGTGCTTG TCTGTCTACA GTTTCATCTA ACAACCCAT AATATCACCC CTTACCACAA AATCTTCTT  
CAGCTTAATC TCTCCACTC TAGGTTCTCA CGCCACCCCT AATCCTGCTC GAAGCAGCCC TGAGAAACAT CGCCGTTAT  
CTCTCCACAC CACCCCAAAA AATTTTCACT GCCCCAACAC TTTACCATA TTTCTTTTA TTTTCTTAT TAATATAAGA  
AGATAGAAAT GTCAGGCTC TGAGCCCAAG CCTGCACGTA TACATCCACA TGGCCTGAAG CAAGTGAAGA ATCACAAAAG  
AAGTCAAAAT GGCTGTTCC TGCCTTAACT GATGATATC CACCATTTG ATTTGTTCT GCGCCACCTT GACTGAGGGA  
TTAACCTTGT GAAATCTCT CCCCTGGCTC AGAAGCTCCC CCACTGAGCA CTTGTGACC CCCACCTT CCAACAAGTG  
AAAAACCCCT TTTGACTGTA ATTTTCACT ACCCACCAA ATCCTATAAA ACAGCCCCAC CCCATCTCCC TTTGCTGACT  
CTATTTTGG ACTCAGCCA CTGACCCA GGTGATTCAA AAGCTTCATT GCTCACAA AGCCTGTTG GTGGTCTCTT  
CACACCGACA CGCGTGATAA TTATTATAT ACITTTAACT AAAACCTTT CAGAGTCTG CAGGGAAGGC TGTATATATC  
TCATAAAATG TTGGGGCCA CTGGATCAGA CAAGGCCACA AAGGCCAAAG GGAAGTAAAG ATCTCATTAT TTCTCTAAT  
AATTTCCCTG TCTTTGCTA TAAATGGTGG GTAGGCTGT ATGGTGATGG CAGATTTTCT TTCCATAAAA TGTCATAAT  
AGGACATTTG AACAGAAGGG AAAAATCAAA TTGCTGAAGT TGAAGAGGG CAATGCAAAG AACTTTGGAG AAAGAAGTGT  
ACAGAGAAGT CAAGTGGCAG ATGGGAGGAA GTTTAAGGGG AAAAATATAG ATGTCTAAAG AATACATTTA TTCATTTTCC  
ACAGTGCAAT TTGGACAAGA AGCCTCTTTC TTGCTCTTT CTATTTCTAT TAAATCATT GAGCTCAAGC AATCCTTCTG  
CCTCAGCTC CCGACTAGCT AGGACTACAG GTATGTGCTA CTATGCCAG CTAATTTTTT AAAAATTAGA TTTAATTG  
GTGAATATT TCTGTAGGAA ACTACAATAA TACAGCCCAG GCACATTGAT CTGGGTGAA CAAATCAGAA GGAATGAATA  
ATTCTGTGTT CCTGGACTC TGACAATTC ATGAATCTGG TACTCTGAT AAAGCATAGG AGGAGTTAT TCATAAAATG  
TGGAGCACA CTATGTGACA AAGATAATGG GATCCCCAT TCATAATAA ATCTGAAGTT CAGAGAGATT AACAATGGC  
CAGGGTCACA TCACGGAGAC AGAGGCAGGG TTCCACTGA TGCTCTGAC TCCCTGTCCC AGGCCCTTCC TCTCCCGCA  
AGCAGAAGTG CAGGGGGCAG AGCTGACCCT GTGCAGTGA AATCTGAGGG CTGAGTTCTT ATTGGAACAC AAGTGAAGA  
CTTCTGGCT TCTAATCTCA GGATAAGGAC TCAGAGCTCC ATCTGTTCCA GCCTTAGGAT AAGAACCAGA ATCTTACACC  
ATGAAAGCAT GAAAGGTAAG ATTTGAGTGA GGAAGAAAAA AAAAAAGTC TGTGTTTCTG ATTCAGTTCA CAAAGCAGTT  
TCATACCTAA GGTACCATCA CAATAACCTT GTGGGGTAAG CAAGGCAAT TTCATTCTG TTTTATGGGC ATAGGAAGTA  
AGTCTCAGG AGGTTAAGAC CAAGGTTTCT GGAGAATTT ATTTATGAA TCTTGATTA TGGGATTACT ATTATGTAAT  
TCCTAAGATC ATATAGGAAT CCTAGAGCTT GAATATAGAA CTTTATTTT AAATCTATAT ACATCATAAT TACAAGGAGT  
AGTGTCATT TGGGTTCTT GGCCTGATG TGTTAGTGA ATAAACATTT TTGTCAGGGT TGCCATGTGT GTCTGTGCAC  
GTGTGCACTG TACACCTCA GGGGATGTAC CCTAAACCAC ATGAATGTGA TTGCACATC CAAGATTAC AGTGTACTAT  
AGGGAGAATC TTTTGCAACA GCTTTTGCTA TAATACAGAA TCTGAGATGT CTTTGAGAAA GAAAAGTGTA ATCATTACCA  
AAAAATTT CTCTAATGT GTGCAATTT GTATGAAAT TATTTGGCC ATGGGACAAG GAGGTATTTC CAGCTAGCTT  
CTGAAGGGC TCTATTCTC CATAAGAATT CAGCTGTGA CATTAGGTGA TATCTGCCA GGTCACTAGA TGCCATAGAG  
AAAGAGGGT TGCTGAACT TATATCAGCA GTGCACTGTA TGCTTTTCT GATTATTG AACATTCAAT TATTAGTGT  
CAAGTAATGC ACTAGATACT CCAGGGATCT GACACAACT CTGCCCTGAA GGAGCATGTA ATCTCACTGG GGAGAAAAA  
AAACATATGA TAATTTCAA ATAACAACT AGGCAACTA GTTAACATTT AAAAAGCAGG CTTTATTCAT ATGCAAAAT  
GCATGTTACA GGGTAACCTT TCAGTAAGAA GCCAGGAAGA GGAGCTCATC ATGGGTTGGA TTAGTAAAGG ACTAGTTATA  
AAAGAAAGTG TGGGTTGAG GGAGGCTGA GATGAAATTT AAAGAATATG TAGAATCTAG GTAAGTGGAT AAAAGGTCTG  
GGGGCAGGG AAAGGAGAGC ATTTCAATGT GAATCAAGGA ATTTCTCAC CTGTTTAACT TCTTCCATAT GACATCAAG  
AGATGTCACT TGCAGTAGC ATTTCAATG TGTTTTCTA CTAATAATAT CGTGATAAAA GAAACATGTA CTATAAGAAA  
TAGGAATGG TCTCATAAAA GGAAACAGCA AAACCCCAA ACTAAAAAC AGCGCAGGCT ATTTCTCTCT TCTCTCTTT  
TGCTTGGCAC TCATGAGATG CTAGGTGTGG AAGTCAGCA ACTGAAAAAG AGAGGTGGCT GAAGAAGGTG GGGAGGCTGA  
AGCCAGTTAA ATAGGATGGT CCAATTCACA GACGGCAGG CTACAGTGCA AATAGGACTC TTCAACTTG AGCAGGACCC

CATTACTTCA CTGGAGTTAG AAAGAAAGGA GAGCGTAGAC TTTTGAAC TTTCTATAAGA GTGTACCTCC ACAGTATACA  
GAAGACGACG TGAATTTTGA TCTGCAAGAA AACTGAGTCC ATATTTCACAT ATGTATCAAA TTGCACTTC ATTTAGAAGT  
GTCTGTCTAT AAGTACAGCA CTGAATTGAA ACTGAAAAACA AGAGTCAAGA AAGAGCAAAG TCAGCCATCT TTATATTCCA  
CATGAATCTT TCCCTTTAT GGTCTTATTT GTTCTCTCTC AGAAAGACA AAAAGCTGAG CTGTATAAAC ACCGTGGGGC  
TGGGGTGTGA GGGATAAATG AGGGGCGAAA TGGAACTGAA AGGAACTGTT GGTGAGGTAG AAATCTTCCC AGATGCACTG  
AAGGAAACAC ACTTCATGTT TGACGTAGGA GGTGCCACCA CACAAAACGT TTCATGGAAG GATTAAAGG ATCTCATGAT  
TTTATGATT CCAAGAATTT TCTTTCACCA AGGGCGATTT AATATGGGTC ATTCATACTG AAAGAAAAAC AAAAGATAAT  
AAGAGTTTAA AAATTGCAAA ACTTGGAGTG TTAGTAGTAA AGGTAAATAT TCATTAGAGA TGAGAAGAGG AGCAAGGAAA  
TGCTTTCAGC TGGAAATCTC AGACAAGAGG CCAGGCTTTA GGAACCTCTG AAGATGAACA AATGTAAGCA AACCTAGTA  
GCAGCACTTC TCAGATTTTC ATGTGCTTAC CACTCAGAGA TGGTGTAAA ATGCAGACTC TGATTAGTA GGTCTGAGTG  
GAGCCTGAGA TTCTGCACCC CTAACAAGCT CTTTAGTGAT GCTTATGCCA CTGGCGCACA GACCCCACTT GGAGAAATTT  
TTGTGGTGCA TACGGTCTTT GTCTCCAGAT CTAATGAGTC TGAAGGACAG TGTAGATTGA TTTTAAAT TTATGTTTAT  
TTTAATTTAA TTTAATTTAA TTTATTTATT TATTTATTT TGAGATGGAG TCTCACTCTG TTGCCAGTC CGGAGTGCAG  
TGGCAGCGAG GCAGCTCATG CAACCACGGC CTCCTGGGT CAAGCGATTCT TCCGCTCA ACTTCTGAG TAGCTGGGAA  
TACAGGCACG TGCCAGCACA CCCAGCTAAT TTTGTATTT TTAGTAGAGA TGGGGTTTCA CCACATTGGC CAAGCTAATC  
TCAAACCTCT GACCTCATGA TCCACCTGCC ACGGCTCCG AAAGTGTCTG GATTACAGGC GTGAGCCAC GAGCCCACT  
GTAGATTGAT TTTGAGCAGT GGAAAGTCAA GGAATTAGAA GGCATGCTTA AATGGAAGT GAAATTTGAG AAAATTTAAA  
CTCATGAAAT AGTGGTGGT ATAACTCGT GATAATTAT ATCCTGGGAT ATAATTTAAT GAGATGGTAA CACATTTAGT  
TTAAAGAAAT AAGTGACACT TTTTGTGT GACACAACCTG TCTTATCTT GGAAAGGACA AGGAGAGAAT GAAATATGGT  
ATGTCTTAC AGCACCTTTC AAAGGGAGAA CCAGATTCTG AGGAGCTGGT CTCATGATGA ACTGTCAGGG TAAACCACAG  
TTCAGCAGCT GCAAATGTGC TTGCCAAAAT AGAGACAAA AAATGTTTCT GAAAACAAA TTTACATAT GCCCTCTCT  
GAGGTGGCA TCATATCTTC CTGTGTATCT TGGGTGTAGC TTCTATCTG CCAGAATTA GACAGTAGAA ACCAAATGAG  
GTGATAACA GAGTCATTT GCAGAAGAT CAAAATAACC CAGCAAGAAA TGAACCCACA AATGCCAAG GAGTCATTCA  
TTCAACATTC AAAAGCTAAT AGAAATGAAC ACAAACTACT ATGAAAATTC ACCCAAGAAC TTAACAAAAA AAAAAAGGC  
TCATGGTGT TAGTGTGATA GTATTCATTT TACCTTTGAC TTGTTCTAAA AACACACCAT ACTTCTACCC CACCTTCTCT  
CAGTGCCGTC ACACAATGGT TTCAGTGTGA AAAAAAAC CAGTTACTG GAAAAGGAGG GTGCTGGGA CTGCCACTC  
TAAGCTGGTA GTCAAGGGTC TTGAGTTCTA AAAGCATACG CGTTAAGAGC ATGATTCTG GATCCAAATG AGTATGGATC  
TCAGCATTGC CATTATTGT GACCTCAGGC TATTTATTT CTCTGTGCT GTTCTTTAT CAGTAATGAA GATGTTTATA  
GACCTTCTC CCACAGACTT AAAGGCATAT TCTATGATT AAGCATGTA AACATTCTAT AACAGTAGA AACATGGAAT  
TAATATTGA TAAAGTTTA TGATTATTGT AACTAATCT CTACITGCT CAAGGCCAT AGAAAACTTA CTAAATTAGT  
TCAACTACA AAAGAGTTTG AATGTGATAT CCACCAAGAT CATATTCAGA CCTAGAATTC TGTGATTCT ATGAATTAAT  
ACAGCCTTG TCAATAAATG AGAGCTGGG AAATAATTCT TCTTGCTAG GCCTTCTAG ACCATCTGGT GAAGCATTCA  
AGACTTATGT TATTGGGGCC AGCCTTCTT TCCAACCTCA ACTCCACAAC TCCTCAATAA GCCATGGGCT CAAGAAAGTT  
CTGCTCAGTG GCCCTGAAA AATGCTTTCA TAGTCTCACT ACCATAACC TGCTTACACA ATTTCTTCC TACAGACTGC  
CTTCTTTTC TGCTTTTCT CATATACCTA ATCTTATCT ATTCTTCTA ATCAACCTTC TTTATAAAC TTTCTATAAC  
CACCAAGCCA AATGACCTT TCCTTCTTA ATATAGACC CATTGGCCAT TACCATGCTC TGCCTGTAT TTTCTGATT  
TTTTCTTTC TATATCTCTG TCTTAACCTC CCAGCTAGGT AATAATTTT CTGAAATCAG GGACCAGGCT GACTCTCTT  
GCTGTCTCAA GAAAGCTTAG CAGTTTCCAA CACAAAATG TTCAATAAAC AACTATTAAT TGACTGATTA TAAAAATCA  
GTGAACCATT AAACCTAATA TAGCAATTG CTTAGCATGG TAATTAGCT TTTGCTAATA TTCTCCAGC CAGTCTCTC  
TCCTGTGCT CAAGGACATC TTAACAAAAA AAAATCTAGT TGATCTGCT CCATCTAGTG GCAATTAATA CAGGTGGTTC  
CGGTAGCCAG AAAACAGCTC TGGGTAGATT TGCCAGAAA ATACTTTCAC TCAGTAGGTG CGAGTTTGAA AGAAATCTTC  
ACATCTGTGG GTTCTCTGCC ACAGACATAG GGAGACCAG CAGAGAAAAG AAGCCTTTC TCACTAGACT CCATTGAC  
TAGTAAAGAG AAGACAGAGT AATTAACAAAG AATAACAAAG ACCTCCACTG ATCGTACATC CTCATCCAGT TACCCCTGCC  
CCACTTCTC TTCACAGCCA AACATTTTAA AAGAGATGAC TGCTTGTCT GTCTTACTT TCTCATCTC AGTAATGCTC  
AATGCTGGC CGTCTGACCT CTGTCTGAT GTCTGACTG CAAATAGTCT CCCCCTGAC ACCCTTGTG CATCCAGGGG  
ATACTTACTG GTTCTCTGG CAATGTTGA AACCGTTCC CTTTCTTGT TTCTTGGCA TTCATTACCC CACACTCTT  
CTCTCTTCC TTCTCCTGC CTGGCAACAT CTTTCTTCT CTCTTCTCT TAGGTGACTT ATTAGATAT CATCTCTCTC  
TGGTCCCAT ACTCTCTCC AGGTCTCTT CCAATTAA AGCACTACA CCCTCCCTGG ATGATAGTAC GACTCTCTGA  
GATGGCAGTT ACCTCTGAA ATGTGAGGGA CCAAAATCCA CTTCTCTGC CATAGCCTCT GTGCTTGGGA TAGGTCCAAT  
GAGCCACAGT GAATGATGT CATAACCCA AAGCTCAGTA CAAAAGTGA CCCATGATCT TTACCTCAA AACCTCTCAT  
TCTTTTATGT TCCCTTCTCA GAAGTAAACA GGACTACCAT CCGCCAGTT CCAGGTGAGA AAGATGATAA TTTGATTCTT  
CTCTCTCACT TTAGCCAAT TAACAGACAC ATTCAGTTAA TATCACTCC TCTTATTTCA TGAACCCATT CTACTACTA  
GTTCCCTAGA CAGGCGCCAT CGGTTTAAAT CTAATAACTG CAAATGCCTC CAAAACAAGT CTCTTTGAT CCAGGCTCAC  
CTGTCTCCA CACTTGCCAT ACTGCTCTG AGGGTGACCT TATAAGATGC CAGAGGTAAG GCTACTCACT GTTTAAACCC  
CTTGTGAT ATCCCAAAAG ACCTCAAGAT AAAGCCATA TCACATGGCT TATACATTAG TTTATGATCT GGCTCTGGT  
GCCTCATTT TCCCACTTT TTCTTTGCA TTCTAAGCAA TGGCCATAC TAAGTTTGT ATTGGTAGGA TGGTTGCCA  
AACCAGCAT CAATCCCTC AGAAATCATC TCACTTCATT TCTAGCATT TAAAGGAAGC TCAGTTGTCC AGCTGGGTAC  
TGAATATGTC ACCAAAGTCC TCCTTTCATA GTTTATTTA CTAAACTCT CTTCTCTAAA ATTCCAGAGC AAGTCACTAA  
ACCCTAGATA CTGAGAAATA TTTTCCATC TTCATTTCTG CCAGGTGGGC CATCAACTT CACATGCTG CATCTCTCC  
CACTGTGCTA TTTCTCCAGT AGAAGAAAT TGAGCTTCAA GACCAACTG AAAAACTT GCCTCTTGG GGAAGGAGT  
GGTAGAATTC ATGCTCCCTA TCTTCCCTA ATTTCTGAAG GACAATGCT GTTAGAGCAA TTGAATGCAA ATAGTCAATT  
GAATAAGCAT TTATTCATT CTCAATAAGT GCTGTGTC TGAATATTT CTAAATAAT ATATTAAAG ACAAGAAGAA  
CACACCACA TGTTTTAA CCTCAGAAAA AATTCTGAG TAATCAGAAA AATCTCCCT TACATAAACT GCCCTTTCT  
AATAGGGATT ACTGTTCGT TCATTCATT ATTCAGCTC ACTAGACCA AAAAGCACAG CTCTGAAAGG AAGCTAGTAG  
ATTTATCACC TTATCTGGT ATTTGGATGA GGACCCAGG TAAATAAACT ACTATGGGT TAATGTGTCT AGCTAGAGCA  
GGAAGTAACT TAAGGAAGTA GAGAATGAAT CAGCAGATGT GGAACCTCT CGCCACTAAT AAACTTACC TTCTTGGTA  
TTTCTGCTT GAAATAGAAA AATAGAGAAA AGGCATTAG CAAAATAG CAATTTAAAG TTTTCAAGT AAGGAGAGG  
GAAGACTCC ACTCTCAAAA CTGTCTTTG AAGTATATTA GGTATTTGT AGGTGGACCC TATCTGTGTC AAAGGAGATT  
TGAGGAACCT GCTTAATAAA CAGTGGTAGA CACTAATACA GAACAGACAT GTTGATGCAG ATGCTCTCTG AGGTCCATT



CCATTCTCCG TGCTACTCAA GAAGACAGAA 25441 TTGCTAAATT GCCTGGTGGC AAGACCCAAT ATGTCCATTC  
AAGTGTTTAT CCCTTCCCAA TCTGCCATCT CATCCTACCT GCAGATTCTT CCCTTGAGGG ACAGCTGCTA ATACTGTAAA  
ACTATGTGCC ATTACAGCTC ACAGCATCAT CTCTATGAGA ATCCACAAGA GAATTTCACT TTGGTCTTGT TGGTAGGAAT  
TGTGCAGCCT CATCTGAGTA ACTAATGTGT TTTTATCTTA CAAACACAAG GAATATCACA TGGTCTCTCT TTGACTGGCT  
GTAAGGAAAC TCAGAGCTAG ATCTGAGACC CTCTCCTACC AAGTATATAA AACTTTGTGA CATACATTTT TGTGCCATAA  
CTTCAACCTT GGTTCCAAAT GATTTTTGTA CCCTAAGTTT AAATTTGGCT TTCTTTTTTT TTTTTTGTGA CTCAATAAAA  
CATCAAGCTC ATTTATTATT GCGAAGAGCG AAACAACAAA GCTTCCACAG CGTGAAGGG GACCCGAGTG GGTGCCCCAA  
ATTGGCTTCT TTTTCTTACT TTITAATTAA TTITAATTG CTATACTGAA CACATTTTGT ACTGTTCTCA CATTCTTTTT  
GAAAAAGCA GAATATAAAT AAGTAGATAA CTAAAAAAA ACTCTTTGAG CAGAAAGAAT CATTGGGGAG GCAATATATT  
TCAGTGGCTG TAAAGTGGCA TTCTAGAATC ATCCTACCCA GGTGAAAGCC CTATTTTGCC ACCTGTAGTG TAGTGTGTAT  
TTGAACAGCT ACTTCTTTTT CTAACACTACA ATTTCTTCAT CTGTTAAAGA GGCATAATAA TTGTATCATC CTCATTGGGT  
TGATAAAATA AAATATTTCC AAGTATTTAG TTCAGGTCCT AGCACGTAGA CAGTGTGCA TTAAGTTTTT AATCCTTTAA  
AGTATTAAG ACTACTATT GAAATCTTT CTCTAAAAT TCAGCCTGCT GATGACCAAG TGCATTGAG CAGGGGGAAT  
CAAACTGAA TTAATTTTCA ATTCTGGTTA GCTTCACATA AATATTTTT TTAGGGATGA TGAACCTAAC AGCAATAGAT  
GAGTAAGAAT CTGTTCTTAC TGAGAGAGTT TCATTTTGAA GAAAAAGGAA CTAAGGGGGC ATGTGTTTCA TTTCATGCCC  
TGGTCTAAC CTGTGTGTG GTTCTGGTGG GAAATCTTCT CAACCGAGGA AAAAACCAGT TCACAAATCT GAAGACCAGT  
GATTTTAGAA GATGTATCTG GACTGGAGTC TAATCTCTGA CTCTGGGTCC TGCTGATATG GTATTTTGA GATTTGGCT  
AAAAATCAT TGCCCTGGTT TCCTTATTTA CCAAACAGGG CCAATGGTAG TGACTAATCA GAAATGATA ATGCCTGGTG  
CACAAAATGT GTCTAGATGA GCCCATGCAC AAGGACACAT GTTCTGGAA CTGTTCTTA TTCTTTCTT AAAAGAAAGG  
AGGGAAGTC TCCATACTAA GACTACTAGG GCAGGGGACA AAGTGCTAGA GTGAGAAGAT TCATCTGAGG ACAGAAGAAT  
AGGGGTGAAG GCTCTAGTCA CTTCATTGGC TACCATTGCT TAAATAGTTA CCTGTGCCCT TTTTCTAACT ATTAGAAGCC  
AAAAAGCCTA TAAATCTCT CTCTCTCT CTCTCTCT GTGTATATAT ATACATATAC ACACACACAT AGACACACAC  
ACACACCTAA ACACACACAT AGAGATTTAT GACTTTTAC TTTATCTCT GTAAATGCCA TTAACATAT TTTGCTTTAG  
ATTTAGCCTG GGAATGTAGC CATTATTTCT ACCATTGCCT CCATAGGAAA AATACTCTT ATGTTTTAAA GGACCAACCT  
ACAATAAAA TCTTTGGAAA GCAGAATCAT TTGTAAGTTG GTGAAAATGG AAGATGTTGT TTTATAAATG AAGACTTTTT  
TTTTTTTTTT TTTTGAGACA GGGCCTCACT CTGTTGTGGA GTGCAGTGGT GCTGTCATGG CTTACTGCAG CCTGACCTC  
CTGGGTTCAA GTGATCCTCC CACCTCAGTC TCCTGGGTAG CTGGGACTAC ATGTGCATGC TACCATGCCT GACTAATTTT  
TTGATTTTT GTAGAGATGT GGTTCGCCA TGTTGCCAG GCTGTTCTG AACTCGTGG CTCAAGTAAT CCTCCTGCCT  
CAGCCTCAA AAGTGCTGGG ATTAGAGGTG ACAGCCAAGG TGCTGGGCC ACAGATGAAG ACTATTTAAT GTTATCTTAA  
AGATACCCTA AGCTTCTAC CAAGCCAGTG ATCTTTTGG GCTTCTGTT TCTTTGTTGG CATAACTGTA ACTAGCCTAA  
CTGCCCGTTA TCTGTTCTCT GTTTGCCCCA CACTGATTCC CACAGCAGTT TTCAAGTTAT CGGTTTGAGA TCTGTACAG  
AAATGACTCC AAGGTAAAAA ATTTAAAAAC AACCCTCTA ATTTTTTAC CTTGCTTAT AAAACAGCCT TAGCCAGCTA  
ACCCCTCACT ACATGCAAAAT GAGTTTGATT CTATTTCTT GATTCTACAA ACATTTATTA AAAGATTTTA GAATTCGGAA  
ATAAATAGCT TCCTTATTA GGTGACTTAC AGCCCCAAG TCCTTAAAT TATTAGACA ATAGCCACCT TATCCAGGG  
GGCAGTGTGT AATAACCCAC CCGTGTCTCT ATCCGTCACT TCTGCCATCA TCGCCCAAGG TAGGAAGAAA GACAGGACAA  
CCGGGGTCAA GATTTGAAGT CTCAATGGAA AGAATAATCA GTGGTTGGAG AAAACTGTCA TTCTTCTTT GCCTTAATGC  
AGTACTTGAT ACTTATACT AGTACTGTAT AGTACTTAGT ACTGTATAAT ACTATAAGAT AGTGAGATTC AATCAGCACA  
GAATTTCTAA TAGCAAGGGC AGAGACATTT TAACGTCTCA GTGCTCTCAG GTTATACATA GCTAATGAAG TTCTGCATA  
TCAACAATCC CCACCCCTC CACACACTTT GTCTTCTGG ATTGGTTAGA AAACCTTACCT AGCGCCCACT ATTCTCAAAT  
TTAAATGAAA GATAAGATCA GAGTGGCAG CAATTAGGGA CTGATAAATA ATATTTTGT AATTGCCAGT GTAAATGGAC  
AGGGGGCAAC CTTTACATAC CATATTCAGT GAACAGAATA CGTACTAAT AATTGTATG AAGGAAAATT AAAATGACAA  
TCAACTGAGC CCACAGAAAG GCAACACAGA GCAGTTGGTT AGCAATTGTT TCGAGATCAT CCTGAACTT GAAACAGGTA  
TATCTTTTT TTTTTTTTT TTGAGACAGA GTCTACTCT GTCACCAGGC TGGAGTGCAA TGGTGCGGTC TCAGCTCACT  
GCAACCTCCG CCTCCCGGT TCAAGTGATT CTCTGTCTC AGCTCCCGA GTAGCTGGGA TTACAGGTGC CCGCCACCAC  
GCCTGGCTAA TTTTGTATT TTAGTAGAG ACAGGGTTT ACCATGTTGG CCAGGCTGGT CTGAACTGC TGAGCTCATG  
ATCCGCGCG CTGCGCTCC CAAAGTCTG GGTATACAGG CATGAGCCAC CACACCTGGC CAAAACAGGT ATATCTTAAA  
AGCTGCCAA TGTCATGAA GTTTACAGCC TTGAATGGTT CTTCAGGTG AGTTTGGGCA AATGTGGCAG CATACACCA  
AGGCTGCTG CAGGCTAGTG GGTGCTCAC ACTTTAAAGC TGAGACACAC TCATGCCTTA AGGTAAAGGG AGTGATAATC  
TGGGCAGCAG ATGTTAACTT CTCAAGGCAG TCCTCTTCT CTCTCTCT CCAGTGACGG ATGGTTGGAA AGCATATATG  
GTGCAATTGG TTAGAGCTGT GGCCTTGGT AATAGATACT TGGGAGAATA CATGGGAATT TCTCCAGGG TTAATGCAAT  
GCCATGTGT TGGGAACCAG GTGACTCTG AAGAGGTCAG GTATTTGGGA GCAGTGCCTT GAAACCTTAG TGGACATTAG  
ACCCACTTC TAGTGAATT GTAGCATTGA AATCCAAGG ATGTAGGCTC TTAGAGGACA GAGATAGTGT GTCATTTTT  
CAGAATTAAT TAAGAGCAGG CCAGGCGTGG TGGCTCACAC CTGTAATCCA AGCCCTTGG GAGGCAAAGT CAGGCAGATC  
ACGAGGTCAG GAGATCGAGA CCACTCTGGC TAACACAGTG AAACCCCGT TCTACTAAAA ATACAAAAA TTAGCTGGGC  
ATGGTGGCAC GCTCCTGTAG TCCAGCTAC TTGGGAGGCT GAGGTGGGAG AATAGCTTGA ACCCAGAAGG CGGAGGTTGC  
AGTGAGCTGA AATTGCACCA CTGACTCTA GCCTGGTGAC AGAGTGAGGC TCTGTCTCAA AAAAAAAAAA GTATTAAAGA  
ATTACATAAG AGCAAAGAAC CATTAGAATA TCTACTTAT TTGTTATCAG CTTAGCAAGC TGCTTGAAG GTAATAGACA  
TTTTTAAAG TTTATCAGAT GAAAAGCGAA AATCAGCCAA CCTGTTTTA TGAAGGTGT TCTGGGCTG ATTTACATGT  
CTCCAGGGAC TGATGGCTCT AGAATGTAAA GCTTGGCATC CTGCTGTGT TGAATCTAT ACATTTAAT TCTGTGGGT  
TTCTTTTTT TTCTTTTTT ACTTTAAAGT TGTGTTCTT TCATGTGAAG TTAAACTCAC ATACCTTTTT TTAATCTCTC  
TGCCAGCCAA ATGATAAATG CCAACCCAGA GAATGCAGTA ACCATGACTG CCACTGGAAT GAAGAGGGGG TTATAATCAC  
CCTCTTAAT CATTGAGAAA CTTTGTCCA ATCTGAAAG AGAAATCAGT AAGGCACATA GCATGAGACC ACCAGCATTA  
TTCTCTAGT CTATCTCATG ATATTTGACT TTTTCTCTC TTACATCTCC CAGTAGTAGC CCATTTGATG CCATTGACA  
GATGAGGAAA CTGGCATGGG AAGGCCCTG ATGAGTCTAC AGCATAGGCA AAGACTGGAC CAGCCTTGCT AGTCTAATGC  
CTACAGAAT TCAATGCCA GATTTGTGT TCATAGAGTT CTGAAAAATG CACCTAAAAA TGTGGGCAAG AATGGTCATC  
GTTGTATTTA GCTCCATGGA CTGTTCAAT GACTGGAAT CTGAAACACA GAGAAGAGCT AAAAGCCTAA TACAACCTCA  
GGAATAATAA AAGCCAATGA TCTGAAGTGG ATAATTCACC AGTCAAAGGA AATCATTAAT GCTTTACTT TAAAGCAGTT  
GTGAAAAAT AAGCACTGA TTTTACATG CCAAGGACCT GCACTAATTT CTTTCCAATG CAGTAGTTAC CACTTCCCTC  
TACTTCTTC ACGAATAAGT AAAAGGGCAT GTTTAGAGAT ACTCTGTAA GTGTAACTA AGTTCATTG GGAGCCTCA

TTTGAAAATA CTGGTATAAA AAAAAATCTG TCTCCTGATA CTAACATTG AAGGAATCTA CTTTTTTTACA TATTGGCAGA  
GGGTCTGATT CTATCCTTAG TTCTTCCCAT TACTTTGATG AACCTTTTCA AGGTGATTG ATCCCCACAC CCAAATATAT  
GATTGAGAGA AGGCTCAAGT TCCAGGAGC TCCAGACAGA AGGTACCTGT TGGCTTGATG AAGATGAGGA GGAAATGAAC  
ACTAGCTAGG CCTTAAAGGG AAATGTCTCT GATAGGCCTA ATACACAGTC CTCTGCTAAA GGCCTCCCTG CCTCTCTCTG  
CTCATCCACT CTACTCCCTG GCCCTGGGCA CGCAGCACAC AGAGATCAGC ATTTCTGACA GCTTCTGTAG ATCCTACCAT  
TTAAAGACTT TTGTCAATCCA TGCAGATAGT CTCAGGAGCA GACACAGGTA GCTATTCTTT CACATGCTAG CTTAACATGC  
ATTTGCTTTA GCACCTATTG CCAGGCACTG TGTGAGGTGG AGGGTATACA AAGATGAACA AGACATGATT CTTCTCATAT  
ACAGATAGAT TTTGGAGGCA TTAGCTTAGT GATGATTCAG GAGTATCCAT TATTGGGGA AGTAGGTGGT CATTAGTGAC  
CTTTTACAGG CATTTCATG GGCTAACAGA GATGTTAGAT TGTAGTGGAA TAGAAGAATG GGTAAGAAAGT AAATCAGTGA  
GTTTCAAGTT TAGGAGTTAA GATGGCAAGA GGTGAGAACA AAAAAAGGAA ATGATTGTCA TTAAAGGAGG AGGAAAGACC  
AGCCAAAGAT TTTACAGTGA GTTAAGCATA CAAATTTATT TCTAGGCCAC ATATTCTTAG CAAAACAACA TGTAATGTT  
TATGTATGTC TTCTCTCATA TCTGCTCATC CATCAGCTCC ATCGTTAAGA TTTTCAAGTTT CCAGGACAAA CTTACTCACT  
TTGACATATT GGACTAGGAT TTGACCAGAT TCCAGATGAT TCACAAATGG TTTTCTTCTT CCCAATTAAC TCAGTTCTCT  
CTGAGCAGAT GAAGGTACAT GCAGAGGTAA AGCTGAAGCT GGCCAGGGGA TGGCTACAGT TCATGATCCC CAAATCTGGT  
GCTGATAGAG GCTCAGCTG AATCATTCA ATGAAAAAGA AAAAAAAAAA AAAGACAAAA CAGTATTTCT GAGTAGAGAC  
CCTCCCTTGA GCAAAGGATT TTAGCCAAA GCTGCCTGAC TACATTACTT GTGATATTGC TTCCAGGCTT TATTTCTTG  
AGAATGATGG TGGGTGGTGA ATGAGAGATG AAGGCAAGGA AGCATTGAAA GCTGTGGGGA GAGGAGTAGC TACTCCAGGC  
TGCTGCCCTA GCTAAGGTGA CCTCCCTT CTGCTGGAAG TACCATTGCCA TATGGCTCT GCATGCTCTT CTTTATGGG  
ATATTCTCAG AGAATCTCTG CCGTTTCTATC TGTCTGATA TCTACCCAAG CATTGTGAAA AACATCCCAA TCACTGAAG  
CAAGTCCAAC TTCCGTAAT TCCAGTAGGT GGGTTGACAG TTTTATAATT TCAATAAGGG ATTTTGATAG CACTTCTAAG  
AATTAACTA CTAAACTAA TGCATCAGGA GCATACCTGT AGAAAAGTTA ACCAAACTT CGTAAGTTCA GATGACATTG  
GTTTTCTCCC ATATGGAGAT AAGGTTGGCA GTTAAAAATG AAAAAAAAAA AAAAACCTAC CTTATTTCAA ACTTGAAAAG  
ATCAAGAGAT TGTGTTTTG TTTTTCAGT GTTATTCTCC TAAAGGTTT TGCATGAGGA AAGTAAAAAG TGATTTTAAG  
AATAAGCCAA ATAAACAAC CAAGAAGAC CTCCACTACC CTGGGAAGGA AACTGGTTGG TATTAGTAG GACACCACAT  
AAAAAGGTG TTATTGAGAG GAGAAGAACC AAAATGTAAC TGAGGTTCAA CAAGACATTA TTTATGCAAT GGCAATGAGA  
AAAAATAAAA ACACAGTATA ACCATGCTGT ATTGCTATAA GTCATGTTAC AACTGGGAG ATGGCTTCAG GGGTATTTGG  
TTTTACTTT TTGTTTGGGA GGTTTTTCAA AAAAATTTAG TTAGAATAAG TCCTTGAGA AACATCACAG TAGGTTAAAC  
AAAGTTAGGT TAAATTAGGC TCCTAAGTT GACTTCTCAG CAAACTTCTA CTGAATGTTG TGACTGTAAG CCCAGGATTG  
CATGACAAAA CCTTAGTCT GAAGTTACTC ACCTTGACAG GTTGGTTCTG GAGATGACCA GTTCCAAAT GGTCACAGG  
TGGTTTCTTC AATCCAGTT AAGTTTGTTC CTTCAGAGCA GCTGAAGGCA CACTGTGAGT TGAAGTGA GGTTCCTCAA  
GGGTGAGTAC AGTCCATGGT ACCGAGCTCT GGGCCGCTCA AAGGCTCACA CTGAATCACT TCAATAGGGA AAGAAACAGT  
ATGGGGAAGA GTTAAGAGGA ACTGACGCTT GGATTGAAAT CCTAGCCCTG CCACCTGATA ACCATGTGCC TTTAAACAAG  
GTTACTTGAA CCTTCAACT TCAGTTTCTT CATCTATATA AGAGGAATAA TGAAATTGTG TTATCTTTAT CAAATTGATA  
TGAAACTAA ATGTAATTCA ATTAGCATAA GTCAAGGACC TTAGAACAAA GCCTGACTCA TCAGAAATTC TAAGTAAACA  
TTAGCTAGTC TTCATATTAT TATCTTCAGC ATTATCTGTA GTGAGAATCC TTAAGCCAA ATAGGTGTA CTGGGAATGA  
CCAGCTTAGT CGGGAATAA CTATCACATC AGAGCCCCTG AGTCTACTAG AGTATTGGGA GCAAGATGTT CAGAGAAGA  
GTGGGCTCC ATAATAAGCC TTCTTTGCAA GGAGAGATA TAAAGTCTA GGAAGCATTT TGACCTCAAT TCTGTCTCT  
ATTCTAGCTC AGTTCAGAA TTTAACTCT TTTGATTTG ACAACCCTCT CCAGAACTG TATCTATTTC CCTGTTCTGA  
TTGGTGGTAC AATAGGTAAA TTTAAGACTT GGAAATCAA GTTTTCACAT TTTAGACCCT GCCATGCCAT TTAGTAAACA  
GTACAACTT CATGCTTAT TCCTCATCTG TCAAATTTAA GCCATTATTG CTACCTTCT CTAGAGACTT CAAGGAAGAA  
TGGACTCAAG GAATCAGAAG AATTTTGTG TTTGAAACT ATATGAGATG AGATTAGGGA GAAACATGGG AACTAAGAGA  
AAATGTTATC TTTTTCATT GATTAAAGA GTACTATTA TATATCAAGC ATTACTCTGG GGCTTGAAGA GCTTAGATT  
CACCTGTAG GACAAAATGG TAGGTAGAAA TTAATGGGTG GATTGTCTATG TATGTGTAT GTGTTTTAAT TGCTTTAAT  
TGATCAGTCT CCTGTAGTA TGAATAATGT ATTTGAGGGG AGCTAATTTA AAATTGTGGA ACTCATCTAA TAACTATTG  
CAAGAATCTA GAAGAAAGAT AATGACGGCA ATGGTAGTAG AGTTGACAAG TGGAAGACAA ATTAGAAAAA CACTAAGTTG  
TAAAAATTGG TAGAATGTTA CCTGCATAA ATGTTGGGGG AGTTAAGAGA GTCTCATACC AGGGTGCCCA TGTAATGGT  
GATTCCACAT ACTGAGATAA GAAATACGAA GAGAAAAGCT GACTGGGAAC AATTGGTTTT ATAGTCTTTT AAACATCCCA  
AAGGACATCC TTAGCATATT TGAGTTTCAA GCTGGAGATA GGCTTATCAG TCCAAAGATC ACATAGATTT GTGAGTCCG  
AAAAGTCAGT AAAGTTGACC AAAGGATACA GTAGATTAG AGCTGAGAGA GCAATATACA AAAGACAAA GTGAGAAAT  
TATAGTAGTT TATGGTCTG GATAAGTGCT CATGAAGGAT CTCAGGAGAA ATGATCACAG GTAGAAAGAA TGAGAAAGA  
GTGATATGAG AGAAACCAAG ACAAAGAAAA GTAAATGTT AAAAATGAGT GAAATAGGCA TACCAATAAT TAAAAATGAG  
TAAAAATAGG ATACCAATAA CATAAGGGTT AAAAAATAGA GTTCAAAAAT GGGGTGAGGG TAAAGTATTA GGAAGGAGTC  
ATGGCCAGG GATCAAGTGA AATGAGTTAG ATCTATAGAT CTATTTTCACT TGGTTGACAT TAAATGTAT TTTGGTTTTA  
ATTCTTTATT GTTTACAAAC ATTGCTTTTT TAAAAATTA AATTGTCCAA TTCAATTGAG GCTCACAAGC AAGTGCCTCA  
TATATACAGG CAATTTGTGG ATCCCAAGA TGCAATGATA AATAAGGAC TACTGATCT CAAGAAGTTT TCCAGTACCAG  
AGGAGACGGA CAAGTGAACA GATGACTTCA ACATAAGTGG GAGAAATGAG GAAGAAATAT GTGGAGCTAT CAGAACCTAAG  
AAAGCTTCTC AGAAGAACT GTCTTTGAAC AATGTCTTAA AGATGACATG TTTTTTGGCC ATGTGCAAAA TGAGAGAGAA  
GGCCACCAGC AAAGTCAGTG TGCTACAGAG CACATGTGTT AAGTGTGGAG AACTGCAAGA AGGAAAGGAA CTAAGAGAAG  
GAAAAAGCAA GATACCTTCT GGGTAACTCA GCCTCTAAT GATAAATGGC ATAGTTTCTT CCAGACCTTA GAGTTCTAAT  
TAATCTAACA AGCTCATTAG ATCGTGAGCT TCTTGAGAGC GGAATCTAC CATGCTAAT CCTTATGGTA ACCCTGACAG  
CTTTTATCCC AACACTGTGC TTCTGTGGT ACTCAAAAAG ACTTGTGAG AAGTGAGTCG AAACCTTCATG CTGACTTATG  
AAATCTTTAC GGAAGGTAA CAATATTGTG AAAGCAGAGC TTCTGTATCA AAACCTTCCA TTTCTCAGAG TGGCTAGTAT  
CATTTTGTTC CAACCAGCT CATGATAAGC TATAATGATT CCTGTGACTT TACCTAAGAA GAAGCAAGA AAGGAAAGAG  
ACTTACCAA CTGACACTGG GGCCCATAGT ACCCCACATC ACAGTTGCAG GTGTAATTAT TGATGATTTC TACACATTCT  
CCATGGCCAC TGCATGACCA GGGCTGGCAA GAAGCTTTAA GGAGGTCAGA AAAAAATAT TTAATGTGA TTACATTTTA  
GTAATCAAAG TCATTTCTTT AGACATAGAT AACCTTTTGT CTGAGATGAT TAAATAATC AGGAAAGGTT TATTTGTAA  
TTCATAGCAT AAAATCATA TGCTAAAATT TTTACGTATA AAATACATA AGCATATAGT CATAGGCATT TATTTGCTTT  
TGAATGAAA TTACCAATAC TAATATTCTG TAACACTTAT AGGAACTTA GTGGCATACC TTGAAACTCT TGAAATTAAT  
TGTTTTAAT GAGTGAGAG GTTAAATGAT GACCTGACCT CAATCATTTG TGCATGCAAT TATTTCTTGT CAATCCCTTT

CTTTATAGAA ATCAAAGATT AAAAAGTCCA AATTGCTAA AACGGTAGAG TCCAATTTAT AAGAGACCAA ATTAACATG  
GTTCAATTATT AAAACATCAC TTGGAAAATG CTGGCTGTTT TGGAAATGTA GAAGATTTTA CAGAAATATT CACACACCAA  
AGATAGTGCA ATTTTATAT AAAATTATAT AAGGTAGAC CAAGAAGGAA GCACGCAGCA CCACACTCTT TACTTCACAA  
TGTGAAAAC AGGTGATGT GAGCCTAAGT TTCCAACCTG CCCCAGCTGT CAGCTTCTCC TCCCCTGCCT TATTATCAAA  
GGCACTGATT GTCTAGCTCT TCCTCTGTAC TTCTACGTA GATCTATCAT TTTGATGTAA CTTGATTTAG GGGTATAGCT  
TTTGTGCACA GGGACAAATC TTACACACCA AAAATTCTTA GGAGTGACAC GATGCAAGAT TATATAGAGG GCTAGATGTA  
TTTTAGAATG AACCAGAAGC TGTTCTCATC CCCCACCTT TCCATGGGGT AAATCTGAGT ATTCTCTTAA CCGTGGCCCT  
TCCTGAGTCT GAGGCAGCAT AGCCGCTTGT TCACTCCCTA CCTGTGTAAC AGAGGGCTGC CTTTAGTTTG TGGCAGGCGT  
CATCGTTCCA TTTGCCGTGA TCTTTGTTT TCTTGATATA GATCTCCACG CAGTCTCTCT TGTCTCTCT GTTGTGGGC  
TCACCATCTC CCCAGTTCTC TGCTTCTTCA GTAAGAGATT TGTGGTTCC CACCCACGTC CATATTCTC TAACTTCCG  
GATTCCTATC CAGTAGTAAG AACGACTGAA AGGCAGAGTC TTCTCCAGAT ACTCAATTTT CGCCTTGTGT TGTATGGCAA  
CTAAATCTGT GTAATTGTCT CGGCAGAATC TTCTAGCCCT TTGCCAGTTC ATGGGTTTTT CAGAATAATG GTAAGTCCAG  
CAGTCGGTTC CATGATGTGC CAGGAAATCT GCAAGACATC AGTGTGACCT ATGCAGACTT ACATAATGTT ACAGCTAAAA  
AGAACCTAGC ACTACTCCAG GCTGAGCTAG AACTTAGAG ATGAGGAAAC AGAGCCTAAG AGTGTATGTG ACCATCTCAG  
GATCACAGAA TAGTTGTTTG CAGATTGAA GTAGAACCTA GACCTTCTGG CTTGAATATA AGATGCTTTT ATCTAAGGTT  
CTATTTGAAA CAAATTTAGT GGTTTTCTAG GTTATTTTCT TTTTCTCAA ATTATTTCTG GTGAAATTTA  
ACCAACATAT TTFAGACATT CATATTCTT TTTCTTTGTA GCTGTTAATG ATTTACAACT AATTACCGT TAATATCATA  
TAACTATACA ATTTACGTAT ACTTTTAACT CCTGGAATCA TTTCTTGAAG GCCAACACAT ATGTACCTAT GGGAGAAGCA  
TAATAAGGAC AGGAAGAACA GTGACATACT TTTAAGTAAC CTCTTTTACA TAAAAACAT TTTATTTTAC CATAGGAAGA  
ACTGCTTCTG GAAAAGCCCA ATATACCACT CAACTCTTAT ATATCTAACT GTATAATTTT TAAAAAGAAC AATTTACAAA  
GCCAAATGGT ATAGGATTAT GAAATTCATT AGATCATGTT CTATACACAA AGAGACTCAA CTGATGATGT TTAATAAACA  
TATGAGTCCA TCAAATATGA GGGCTTGAA GATATCTAAT TAAACACATA ATTACACAA GACTTCATAA TAATATATGG  
CATTCTAAGC ATGGTATGAT CTACATGAAT CACTATTTAA TACAGTAAG AAACAGATAT AATTGATGGT AAAGAGCATC  
ATAAAATAAA CATTTTGAAC AGAGTTTGA ATGAGCATT CACTAGAATG CAAGTTCTAA GAGGGAAAAA ACTGTTGTGT  
CCACTGCTGT ATCCTTAGTG CCTAGCATAA ATTTACACA TTGTAGGGAC TCAGAAAATA CCTGTTGTAT GAAAAGAGCA  
CTAAGTTTCT ATGTGACACA GTGCAGACAT GGCATAAGGA ATGTGTGAAC GGGAGAGTTA GCATGTTTGC TTGGCTAGAG  
CTGAAAATCC AGGCTAGGGA GAAAGAAGAC ATTAGTTTAC TTAGGAAATG AAAAACCAAG TTCAAAGCTA TTGCTGGAGA  
GTCTTCAAGA ATCAGATATA AAATTTGTCA CAACAATGGG AGAAGGACCA AAAAATGATA AACCCCGCTC CCTTAATAAG  
CTCGTATTGT AATTGTAGAA ATGACATTAA TGTACACTGA ACTATGAATA AAAAATAGAA AATGAGGTGC TAATATTTTG  
GTACAGATTG TAAGTACCTT AACAGAGATT TCTTAATTAA CATTATCTCT TTATAATTGA GGGATTTTGT GGGGTTATTG  
GGATTGAACT TCTACAGCAT GGGCTATTAT AGGTTAAAAA TAGTGTCAG GAGTTTCTGG GGAAGAACTA AAGGTAAGAA  
GAAAAGAGAT GTTTACAGAA GGGATAGAAT TAACAGCTCT GTGAAATAAT TTCCCTTAG ACTATGTATA ACTAGTGGAT  
ATTTAAGAAA AATGAATATA AGTAAATAG ACTTAGCGAT ATATAAATAT CATAACATAC CACAACAGAG CATTGTCCAC  
CCCCACAATT TGAAGATGTT CCATAAGTCC CTCTGGGTGC TCTGACATTT CCATGGAAAT ATCTGCAAAAT GAAATACAAA  
ATTATATTTA GATGTATACT CTAAACCAC ACATTATAG CTCTTAGGTT GGTGCTTACA ACTTCTTAA TAATCAGAA  
AAAACACATA TGTCTACTAA CCTGTCTGA GGTAACAGGT TTCTCAGACA TAGATGAAAA ATTACTTCAA ATTTACATCA  
GAAGTATGTC ACAGTTTTGT TTTGTTCTAT TTTATTTTAA CGCTTAGTTC TCAAGTTGCT AATCGGTACT GCCCTGAATT  
TTTTCTATGG TTTGTTAATT TTTATACCTG CTTTCTGCT GAGCTATTAG ATAAAACTAT TTAATATTTA CTATGTATAT  
TTTTAAAGT ATTTGTTGCTG CTTAATTAAC TATTGATGCT TATATTTAAT GTTATAGCT CACTCTTGAT CATAATGGGT  
CAATGCCCTA AATACCTAAA AAAAAAATAA ATTAGTAGC CAGACACCAAG GAAAGAAAAG TATTCTTTT TTTAATAAAA  
AGAAATACCT TTTTGAGCAA CTGAAATGAC AAAGTCACAA ATTTCTGCA CACCTTAAAA TACTATTAAT GTAAATGACG  
AGTTAATGGG TGCAGCACAC CAACATGGCA CATGTATACA TGTGTGACAA ACCTGTATGT TGTGCACATG TACCCTAGAA  
CTTAAAGTAT AATTTTAAAA AAATCTATC TTCAAAGCA TATCACTTCT CAGGTAGACA CAGTGTATAT TGCAAAAGAT  
CTGATTTCAA TAGTATTTCT TCAAGAGTCT CCCCAGAGAC AAAGTCAAGA AGAGGAAATC AGCATATCTG AGAAGAAAGA  
TTTCAGGATC ACTTTTTTTG AGGGTCTGAG AAAATGTTTA GTTTCTATAT TATTTAAAAA CAGAATTGAA ATGGGGTGAT  
TCCTATCTCT GCCACCTGCC TCTACAACCC CAAGAGTTTC TATCTGAGCA TCTAAACGTC TTTAGGCTG AAAGGCTCAC  
CATGGCTTTG CTTGGTCTCT CTCTAGTTCT TCTGCAGCCC ATTGAGCCTC TTGACTTAGC ACAAGGGTCT CAGGCTCTTG  
CCCAAAGGGA GTGTGCTGTG CTGCAGGTAG ACTGCACTGA ATGTCAACAG AAAGCCTTGC TTTCTTTCAT TTCTCTAACC  
CAGTCTCACA TCTCCTCTCT CCTCCCTTT TCCCTCCCT TCTCCTGCA CTCTCTTTC CTCTTTCCCC ACCCTTTCC  
TAGACTGGCC TCTATTGCCT CCCACTGAGA CAAAAATGAA CTGCTGATCA GAAAGTAATG TGAAGTAGATT CTCTCTCTCT  
TCCCTCTTT CTATCTCTCC TTCCATTCTC CTATGCATCT TTCTTACCC TCTCCTCTCT TCACTCATTG TTGTTGCTGT  
TCTTCTCTCT CTCTCTCTCC TCTCCTCTCT TCTTTTCCAC CACCCTCCCC TATCTTTTTC ATAAATGCTA AACTAACTCT  
TGGCTACCTG TGGTAAATGG CCCTTGAAAA TTGCAATAC TACAAATCAA AACTGCATTT CAGACATATT TATGATGTTT  
GCAAAACTTC AGTAGAGCTA AGCAGTGGAC TTGACTCGTT TCGGTTCTCT CACCTCCGTC TTTCTTGTCT CACCACCTAG  
TGGACGTCTT TGTTAGTGGC ACTTCTGAA GTTAACCCCT GAAGAGAGCC CATGCTCTCT AGCTTTTAC CGTGTAGGTT  
TGGGAGCCTA CAAGTACCTT TAATATTCTT GGAATATAAA ATGAGATGGT TTTATAAGAC TGCATGTGAA ATTAGGACCC  
ATATGATGAA GGCAATAAAA AAGGAAGACC CACTGATGTG AGTCAATGAG TCAAATGCAA ATCAGATTG CATTTTTAGG  
AAAATGATAA TAACAACAAC AAAAATCTG AAGTCAGCG CCCCATATT ATTATATTGT TTAATCTTTA TACAGCTCT  
CTGCTATAGA TATGATTATT ATCCCCATTC TAAAGAGTCT CAAAGAGGTT AAGAAACAAA TTCAAAAACT AGCGAAAGAC  
AAGAAATAAC TAAGATCAGA GCAGAACCAT AGGAGGTAGA GACACGAAAA AGCCTTCAAA AAATCAATAA ATCCAGGAGC  
TGCAATTTGA AAAGATTAAC AAAATAGATG GACCACTAGC TAGACTAATA AGAAAGAAGA ATCAATAGAC ACAATAAAAA  
ATGGTAAAGG GGATATTACC ACTGATCCCG TAGAAATACA AACTACCATC AGAGATTACT ATAAACATCT TTACACAAAT  
AACTAGAAA ATCTAGAAGA AATGGATAAA TTCTGGACA CATACACCCT CCAAGACTA AACCAGGAAG AAGTCAAATC  
CCTGAATAGA CTAATAACAA GTTCTGAAAT TAAGGCAGCA ATTAATAGCC TACCACTAA AAAAAAGGCA GGACAGATG  
GATTCACAGC CAAATTCTAC CAGAGGTACA AAGAGGTGCT GTTACCATTC CTCTGAAAC TATTCAGAG TAATAGAAA  
GAGGAACCTC TCCCTCACTC ATTTTATGAG GCCAGCATCA TCTGATACT AAAACCTGGC AGAGACACAA CAAAAAAGA  
AAATTCAGG CCAATATCCC TGATGAACAT CATTGCGAAA ATACTCAATA AAATACGGCA AACTGAATCC AGCAGCAT  
CAAAAAGCTT ATCAACCACA ATCAAGTTGG CTTCATCCCT GGAATGCAAG GCTGGTTCAA CATACACAAA TCAATAAACA

GAATCCATTA CGTAAACAGA ACCAATCACA AAAACCACGT GATTATCTCA ATAGATGCAG AAAAGGCCTT GGATAAAATT  
CAACACCCCT TCATGCTAAA AACTCTCAAT AAAGTAGGTA TTGATGGAAC GTATCTCAAA ATAATAAGAG CTATTTATGA  
CAAACCCACA GCCAATAGCA TACTGAATGG GCAAAAACCTG AAAGCGTTCC CTTTAAAAAC TGGCACAAGA CAAGTATGCC  
TCTCTACCA CTCTGTTCACATAGTATT GGAAGTCTG GCCAGGGCAA TCAGGCAAGA GAAAGAAATA AAGTGATTC  
AAATAGAAGA GAGGAAGTCA AATTGTGTCT GTTTCAGAT GACATGATTG TATATTAGA AAATCCCATT GTCTCAGCCC  
AAACTCTCTT AACTCTGATC AGCAACTTCA GCAAGCATGGT GCTGGTACAA AAACAGATAT ATGGACCAAC GGAACAGAAC  
TACAGCAATA ATAGACAAAC AGAGAGCCAA ATCATGAGTG AACTCCCATT CACGATTGCT ACAAAGAGAA TAAAATACCT  
AGGAATCCAA CTTACAAGGA ATGTGAAGGA CCTATTCAAG GAGAACTACA AACCCTGCT CAAGGAAATA AGAGAGGACA  
CAAATGAATG GAAAAACATT CCAATGCTCAT GGGTAGGAAG AATCAATATC ATGAAATGA CCATCTGCC CAAGGTAATT  
TATAGATCCA GTGCTATCCC CATCAAGCTA CTACTGACTT TTTTCACAGA ATTAGAAAAA AACTACTTTA AATTTCATAT  
GGAACCAAAA AAGAGCTTGT ATAGCCAAGA CAATCCTAAG CAAAAGAAC AAAGCTGGAG GCATCATGCT ACCTGACTTC  
AAACTATACT ACAAGGCTAT AGTAACCAAA ACAGCATGGT GCTGGTACAA AAACAGATAT ATGGACCAAC GGAACAGAAC  
AGAGGCATCA GAAATAACAC CACACATCTA CAACCATCTG ATCTTTGACA AAGCTGACAA AAAGAAGCAA TTGGGAAAGG  
ATTCCCATTT TAATAATGA TGTGGGAAA ACTGGCTAGC CATATGCAGA AAAGTGAAC TGGATCCCTT CCTTACACCT  
TATATAAAAA TTAATCAAG ATGGATTAAA GACTTAAATG GAAGACCTAA AACCATAAAA ATTCTAGGAG AAAACCTAGG  
CAATACCATT CAGGACGTAG GTATGGGCAA AGACTTCATG ACTAAACAC CAAAAGCAAC AGCAACAAAA GCCAAAAATTG  
ACAAATGGGA TCTAATTTAA CTAAAGAGCT TCTGCACAGT AGAAAAAAA AACTATCAT CAAAGTGAAC AGGAACCTA  
CAGAATGGGA GAAAATTTT GCAATCTATT CACCTGACAA AGGGCTAATA TCCAAAAATCT ACAAGAACT TAAACAAATT  
TACAAGAAAA AACAACCAAC ACCATCAAAA AGTGAGTGAA GGATATGAAC AGATGCTTCT CAAAAGAAGA AGTTTATGCA  
GTCAACAAAC ATATGAAAAA AAGCTCATCA TCACTGGTCA TTAGAGAAAT GCAAAACAAA ACCACAATGA GATGCCATCT  
CATGCCAGTT AGAATGGCGA TTATTAATAA GTCAGGAAAC AACAGATGCT GGAGAGGATG TGGAGAAATA AGAATGCTTT  
TTACAGTGTG GGTGGAAGTG TAAATTAGTT CAATCATTGT GGAAGACAAT GTGGCGATT CTCAAGGATC TATAACTAGA  
AAAACCATTT GACCCAGCAA TCCCATTACT GGGTATATAC CCAAAGGATT ATAAATCAT CTACGATAA GACACATGCA  
CACTTATTT TATTGAGCA CTATTACAAA CAGCAAGAG TTGGAACCAA CCAAATGCC CACCAATGAT AACTGGATA  
AAGATGATGT GGCACATATA CATCATGGAA TACTATACAG CCATAAAAAA GGATGAGTTC ATGTCTTTG CAGGGACATG  
GATGAAGCTG GAAACCGTCA TTCTCAGCAA ACTAACCTG GAACAGAAAA CCAAACATTA CCCATTCTCA CTCATAAGTG  
GGAGTTGAAC AATGAGAACA CATGGACACA GGGAGGGGAA CATCACACAC TGGGGCATGT CAGGGGATGT GGGGCTAGGG  
GAGGAACAGC ATTAGGAGAA ATACCTAATG TAGATGACAG GTTGATGAAT GCAGCAAACC ACCATGGCAC ATGTATACCT  
ATGTAACAAA CCTGCACGT CTGCTCATGT ATCCAGAAA TTAAGTATA ATTTAAAAA AGTTAAAAA AAGAAAGTTG  
CCTTAGTCA ATAACTAGTA AGAGACATGG TTGGGAATT GTACAGAGG CAATCAGTTC CAAATCAAC CTCTTGATCA  
TTAAGTGAA TTTATGGCAG GAACCTGGAA GACATGGTAA ATGGGGAAA AACGTGGAGC CAGGGAGACT TGTGAAAGTG  
CCAGTGCTCC CACTATACCC TGAAGAAGT ATCTAGACTT ACTTTTTCT AAGTCTCTC CTCTAATTCT CTCAATCTCT  
CTCTCTCTT CTCTAAGAGA TGGGAATGCT GCTCTGTAC TCAGGCTAGA GTGCAAGTGT GCGATCATAG CTCAATGCAC  
TCAAGGAATC CTAGGGTCTA GTGCCCTTC TCCCTCAGCC TCCCATGTAG CTAAGACTAC AGGCACATGC CCAACCCCTC  
GACTAATTT TTTATTTTT ATTTTTGTAG AGACAGGATC TCACTATGTT GCTCAGGCT TAATTCTGTG TTGAAGCTTG  
TCCAATCAGG CTTTCAGCCA CACCAATTCC CTGAGACTGC TCTACCAAG GTCCTACTC TCACTAACAC AAACAGCTTA  
TTCTCCATCC TCATCTTACT TCACCAGGGA GCTCCTGGT TTCTCTCTAC TTCACTGGCT ATTTCTCTG TATCATGTGT  
TGATTCTCCC TCATCTCCC AACCTCCAAA CCTTGGAGT ACTCCAGAGA TCACCGCTT GCTCTCTGT GTCTAACCTC  
ACTAATTGG TGGTCCAATT CACTCTTG ACTTTGAATA CCATTTAAAT GCGAACGAAT TCTAAATTCT GTACAACCAG  
AACCATTCTC CTGTAGCCAA ATGCTACTC AACATCTCCA TCCCAACAA AATTTAGTTG TTCAATAAGC CTCTCATATT  
TTACATATCC CAACTGAAC TTCTGAATTT CTCTCCAAT CTGTAGGGCT CTTCCACAG CTTTCCATC TCAGTGGATT  
ATAACTCCAT CCTTCCAGTT ACTCAGACCA AAATTTTGG AGTTAATCTG GACACCTCTC TTTTTTTTCA CAAGTCATAT  
CCAATGTGTC AACAATTTTT GGTAGTGGA ATATTGCGG ATTTTAAAG AAATCAGAGA GACCGATGGG GTTCAGGAGG  
ATATTTATTA TTAGGTGCA CTGGCCAAGT CAGATTAACA TCAAAGGAC TGAGCCCTGA ACAAAGAGTT AAGTTACCTT  
TTAAGCATTT TGTGGGGTGG GAGAGAGGGG TATCTGTGCA GGGGGAAGCA TACTACAGAA GTGAGAAATA AAGACAGTTA  
TTCAATTAAT TGAGACATGC ATTACATCAT TTCTTACTTT TCAAGAAGAA ACATGTTTTG CGACTTGAGT TTATCTGTCT  
AGTGACCTTG CAGCTGCACA GCTAGAGAAA CAGGGTCTTC ACAATGCCTG GGAAGGAGG AGAGGTAAGT CTCATAGCC  
ACAGAAAAAC AGGCAGTTAA TTTTAAAGG GCTCCAGCTC TTCTCTTTC TCAGGGGGAG TTGGGTTTG TTACATACAA  
CTGAGTTTCC GCTTACACAT TATTTAATT CTTTAATCT CTGTTCCAAA AGAAGCCAGA TACAAAAGGT TACATGTTGT  
CTGATTCCAT TTATATGAAA CATATAGAAG AGGTAAATCC ATAGAGACAG AAAGTAGATT AGAGGTTCCC AGGGGCTGAG  
GAAGAAATGG GGAATACTG CTTATAGGGT ACAGAGTTTT CTCTGATAA AAATATTTTG GAAGTAGATA GACATTTTGT  
TAGGCCATTC TTGCATTGTT ATAAAGAATT ACCTGAGACT TGGTAATTTA TAAAGAAAAG ATGTTTAATT GGCTTACACT  
TCTGCAAGCT TTACAGGAAG CATGGTGCCG ATATCTGCTC AGCTTCTGGT AAGGCCTCAG GAAGCTTACA ATCATGGCAG  
AAGGTGAAAG GGGAGCAGGC ATATCACATA GCAAAAGCAG GAGCAAGAGA GGGATGTGGG GAGGTGACAG TCACTTTTAA  
ACAGCCCATC TTGTGAGAA CTCATTCAT ATCATGAAGA CAGTACCAAG AGGATGGTAC TAAATCATTC ATGAGAAACC  
CCACCTCAT GATCAAAATCA CCTCCACCA GGCCCCACCT CCAACACTGG GGATTACAAT TTGACATGAG ATTTGAGTGA  
GAACACGGAT CCAAACCAT TACAGAGATGG TGGTTATACA ATGCGATAAA CGTCACTGGA TTGTACACTT TAAGATGGTT  
GTTTTATGTT GTGTGAACCT CACTCAATA AAAAAAATA TTTAATGTAC ATTCAGCCAA AAGAAGATTT GGAATAGGAA  
AGGTGATGGA GATATATTAA CAGCCATTTG ATGGGTGGTA AGGAAAAGAG TGGTTATTAG ACTGTTTTGT GGCCCTCAA  
AGGTAGAACT AGATCGAGTT GGTGAGCATT ATAAACCAT CACAAAACCC TGGAGAGAGG ACCCAGTGCT GAAGAACCCT  
TTGCCTGCC TGAGACATGA GGAAGTACC AGTGAATGCC ATGGAAGCA GCATCCCTGG GTCCAAGGGA TGGTCAAAGG  
ACCACTACC AACCTTTCCC TAGCCTACGC CTCAATTACA GATGACCGCA AGATTATTT GCTCATTTGT GCCAACCAAG  
GCTGCACTCA CTGCAAGTTC TATCAGTTTA TCATGGGTAA AAGGAATGTG CAGTAGAGAA CTAACCTA GCCCACCTAC  
CTCCACAATC CTATCAGGAC AAATCACCAT GGCTCACATT TCCTTACATT TGGCATGTAA GGCCCTCTTA CTGTCTGTCA  
TCTATCTCT ACACAGTTCA CCTAACTGT TCTCTCTGA CCAACCTTG ATTTTCATCC CAAATGCTTC CTGCCATCT  
CTGGGATTCC TGTCTTACC ATCACCAAA TCCCTCAAT CTTCAGTTT CTGTITCAA CTTTCTCTCT ACCTCTTGC  
TTTGTCAAT GCCGACTGC CTCCCTAGGA CATCACTTCC CTGCAGATC TCTCAAGATG ACAATATTTA TTCTCCACAC  
AGCACATACT TCAGGGTTGG AAGGCAGGG CAATCTTCTC CTTTATAATG AGTGCTCTT ATATATGTTT ATTCATCTGC  
CCTCTGTAA AACACACACA CACACACACA CAAAGAAGAA ATAAATAAAC TCTGCTTCT TGAAGCTGT GACACTGAGA

TAAACCATCT CACTGTCCTC ATTGTAGTGA CCTCTCAACT CCTCATGCAA GATTGGCTTT GGCACCTAGT TCCTGATCTT  
CCTTTCCCTG TAAGCACTTC TCATAGTCTT ACGGGACTTC ACCATCCATG GCACAACCAA TACCACAGCC CAGATCCTCA  
GCTCTCCAAT GACATTTTCC TCCACTAGAT TTGAGCTACC TCCTTCCCTA GGCACAGCCT CAACCTCGAC AACACCTAAG  
ACTGTACCGT CTCTAAAGTC ACATGTTCAA ACAGTCTACT CTTTAAACCAC TGTCTCCTAT TCTTGCAAGT GTATTGCTCA  
AGTATCTCAT TGCAATGCTT TTTACTTCTA CCTCATTGAA CCTCCAGGCC ATTAACATT TCCTTATTTT TAACCATCAG  
GTTTCTCCTT ACTTGTTTGT TTGTTTATTT GTTCTTTTTT TTTTTTTTTT TTTGAGACAG GGTCTCACTC TGTGCCCAG  
GCTGGAGTGC AGTGGTATGA TCTCGGCTCA CTGCAGCCTC CATCTCCCTG GTTCAAGTGA TTCTCATGTC TCAGCCTCCC  
GAGTAGCTGG GACTACAGGT GCATGCCACT ACGCCTGGCT AAGATTTTGT ATTTTATTA GAGAAGGGGT TTTGCCATGT  
TGGCCAAGCT GGTCTCGAAC TCCTAACCTC AGGTGATCCA CTGCCTCAG CCTCCCAAAG TGCTGAGATT ATAGGCATGA  
GCCACTATGC CCCACCTGGT TTCTCCTTAT TTATTTCAGG TCTATGCTGC ACTATTAATA CTGCCTTGAC AAAAATTATA  
ATAGTGAGAA AATTATGACA GTGAAAGAGA TCTGAAATAA TCAACCCCA TCTTGCTTTT ACCTTCCAGA CTGCCCTTAA  
TAATTCCTGA GCTTGGGCCA AGCTATCTTT GGCAGAAATT TAGTTTATAG TTTAAATGAT AATAGCCCTT CTCCAAAAC  
AAACTGCCTT TGTAATACTA ATAAAAGACC ACCAATGAAA GGTTAGGAGG ATGAGAGGAG CCTGAATTCT GCTAAGGTGT  
AGATGTAAC AATTACCAAC TGTTATTCCG GAGGTCACAA GATTTGCAAC ATCGCCAATT ACTCCTGCAG ATAACAGCAC  
TATCATAGAA TCTGATTGGC CTTTGTAGAT GTCTTTTAC ATTCTTACAT TTCAACTGGT GGCTCTACCT GGACCCATCA  
ACAAGTCTG TGGTCCACC CAGAAGCAGA CTTAACATGC ACAAGGACCA TTTTCCACAC CGCTATGATT GCATCCCAAC  
CAATCAGCAG CAACCATTCC TCTGCCTGCC AAATTATCCT TGAAAAATCT TAGCCTTAGA ATTTTGGGGG AGGCTGATTT  
CAGTAATAAC AAAACCCCGG TCTCCCATTT GGCTGGCTCT GCATGAATTA AATCTTTTCT CTATTGCAGT TCCCATCTTG  
ATAAATCACC TTTATCTGGG CAGCAACAA AAGGAACCCA TTGGACAGTT AACTGTTGG CAGATATATC TTGCTTCCAA  
AATTGGATTT TTGTTAATG AATTATTCT GTTTCTTGA TATTACAAC TGTGAATGTT GTGCTGAAT TCTCTTATT  
TCTTTGTGAA AAGAACTATA TTGCTACAGC CAGTACATAC AGATGGATAG CTAATTACTC AACACGGGGG GATGTGACCA  
TCACCGCACT GTGCAATGA ATGTTACCCA TTGTCCACTT TTCCAAACT ACATAGTGT ATATGGTATA TGTGCAATC  
AACGGTGGCA AAGCTCCAGA AATACCACAT AGACATCAGG GACACTTAA ACTAATCAGC CTATAGTCTT TTTTCAGTAA  
TTTCCAAACC TGGTTGTGCA TCCAAATCAC TTGGTAACAT TAAAAAACA AAAAATATA CACGCAACAT TCGTCCCAA  
TCCTACTGAA TCAGAATATT TTGGGTTGGT TCAGGAACAT TCAGGAGTTT TTCAGGGTCC AAGGTTTATA TAATTTGAGG  
TCTCTCTTTG AGAAAAGGAA CGTAAAAGCG TCTTGCTTTT ATAGATCTTA CAAAGATGTA TTACCATGTA AACACATTCC  
TAGGACCCAG GCCCTGTAA TTTAAAGGT TATCTAAGTA ATGGGCCCTG AAGCTTAATT TTCATTATCT TCAGGGCAAA  
TTACCTGTGG GTTAGGGTTT AGGAATATAT CTCTCTGTGT ATGTGTGTGC ACATTAGCAT GTACGCTTGT GTGGATTTT  
TTTTTTTTTT TTTTTTTT TGAGACAGAG TCTCGCTCTG TCGCCAGGCT GGAGTGCAGT GGCCTGATCT CTGCTCACTG  
CAAACCTCCG CTCCAGGCT CAAGCGATTC TTCTGCCTCA GCCTCTTGAG TAGCTGGGAC TATAGGCAGC CACCACTATG  
CCCAGCTAAT TTTGTATTTT TTAGTAGAGT TGGGGTTTCG CCATGTTGGC CAGGATGGTC TTGATCTCTT GACCTCGTGA  
TCCACCCGCC TCCACCTCCC AAGTGCTGG GATTACAGGC GTGAGTCACC ATGCCAGCA CTGTGTGGA TGTTTAAGC  
TCCCAGGTGA GTGAATACAA AACTAGATCT TTCCCTTCTG TAGCATCTGT ACTGTTTACT CTATGCATCT CAATATTTT  
TCTTTAGTA TCTTCTTT TTCTCTCTA TTACTCTCT TGTGCTATT TTTACACCTC CTTTTTAA AAATTTTTC  
CCTTTATTT CTATTGACCT TTAGCCCTCA CAATGATTC TACAAGCCCC ATTTCTGTAA ATGGGGATTG AAATAATTGC  
TGGACTTTT AGAGATAGAT ATATTAATTT GCAACTGGC AGTAGTGGG GCAGTTGATA CATAACTAGG TTTAAAGTC  
TAGCCTTCTG AGACCACTCA TTCCATTTGT GAAAAGTGAT TCTACTTCT ATATGAGCC AAAATATGCA TTCATTCAAC  
CATGCATTGA TTTATTCATT CAATAAATAT TTGTGGATG TCCACTCTGT ATCAGGAATG TGCTAGGTTT TGGGAATACA  
GCAATGAACA AGTAATTTT TCCTACCCC TAAGGAACCT AGAGTTTACT GGGGAAGACA GACATTAAC AAACAATTTG  
GCAAGTAATA ATCTATAATT ATTTATTACA ATTAAGGAA GGAAGAGACA TATGGATTAT GAGGGCTTAA AAGAGGAGC  
CTAGTGTAAG TAGCCAGTTC TCGTGAAGGG ACATGTATTA GTTGGAGTTC TCCAGAGAAA CAGAACCAAT GGTGTGTGTG  
TGTGTGTGTG CGTGTGTGCG TGTGTGTGTT GGGGTGTGGG GGTGTGGTAT TTTTATAGA AATTGTCTCA CACAATTATG  
GAAGCTGAGA AGTCCCATGG CCTGCTGTCT ACGAGCTGAG AACCAGGAAA GCCAGTGGAA TACTTCAAAG TCCAAAGGCC  
CTGGAACCAA GAGTGCCAGT GTTGAAGGC AGGAGAAGAT GGGTGTCCCA GCTTAAAAAG ACAGTGAATT CACTCTTTT  
GCTCTACATA GGGCCTCAAT GGGTTGGATC ATGGCCACCC ACATGGTGA AGGCAATCCT CTTAGTCTAC CAATTAATA  
CTAATCTCTT TGGAAATACT CTCACAGACA CACTGAGAAA TAATGTTTTA TCAGGGTGAT AGAAATCTTC TGGAGTTAA  
CAATGGTGAT AGCTGTACAA TCACATACAT TTTAAAGGG TCGGTTTTAT GGAAAGTGAG TTTATCTAA ATAAATTTT  
TAAGAAAGAG ACTTAACACA GAGATAAACA TAAGCACATT TATTGTCAAC CTTTATAGTG TTATGTCAA TAGGTCTGAC  
ATAAGCTTAA ATAAATATAT ACTTAAAAA TTATAAATA TTTAAGTTA TAATTTAAAA TTCTCAATAA AACTCAAACA  
CAAACCAAC TGGTATTCA CACAGCTAAT TTCTAATGCA GTTTACATAA ATATTACAA CACTTAAACA ATTTCAAAGA  
AAATAACACT GTATTCCATA CATAGCCTGA TCACAGTAGT TGTCTCTCT TATTTCCAG AGTTTTCTG CCCCTTAA  
AGAACCTCTG CTGTTCTGAT CTTATCACA TCTCTGTTT GACTGTGGC TTTGTTGTT CAGTGTTCA GCCAGAACT  
CTCTGAAACT TTTTTTCAA CACATGCTAA GTTAATGGAA GTGAGGAGA GTTTGATTCT TCACACTCCT CAAGGCTAGA  
GCAGCTTTGG CAATTACTGA CTGAGAATTT TCATTGCCA GTGATCAACT GAAAACCTGA GATTCCTTTG GAATTGTTAA  
ATCTGCTTAT AAATAACAT AAATGCTTGC TCACACAGGC ATTCCTCTCT TCCAGAGCAC CTAACATAC AGAAGAAAAC  
AAATAGGGAA TAACTATTAG ACATCTTCAT TCGTTAAAAA TCTACCAGAT GACTCTTTA CATGGTGAGT TTCTATTGTG  
AATTTAAAA CTCCATAAT ATACAAGAAT TATGTTTACA TATCATATCT GACAAACATC TTTGTAGGAA TGCAAAGCAC  
ATCCATCTTT CTGTATCTT TTCCAACAA GACATTCATA AAATTATACC TTTGTGTGTT TGCATTTAG CTTTTATTAG  
TTCAAAACGT TTGGCCTCAT GGAAGTTTTT CATCGTGGAA ACCAATATT TCTGAAAAA TACTGTACAA TATCAAAACC  
TTCCATTGAG TTTTACTCT CCAATTCTAC CATGTTTCA AAAACAACCT GTAGTAAAAA CACTCAGAAC TTTATTCTGG  
TTAACATCAT GCCTTGCTAG GGGACAATAG TTTCCCTTTT TGAAATAAAT TAAAAACAGA TGTAACATAA TTTGTTAATA  
AACAATGAGG GGGTAATCTA GAATAAGTAA CTTTACCAT ATCATAGTTG ACAGCATTTA CAAGTTTTT AAGTCCCTAC  
CACACTTGTA TTGAATGAAG AAGTATGGAA GATTATAATA TATTCAATGC AAGTAAAAAT ATCACAATCC TTAAGAATC  
TTAAGAAGC ACTGAATCCC ATAGGGATGA AAGTGATTA ATTGTGCATA GTAACCTCG CACAGGATC TCAGTAGGAT  
TTGCAACATT AACAACCTC CATGCATTTG CCGTGGGCA TTCAACATCT GTCATTTTTT TAAGTTATA TATTTTATG  
CATTTTTTCT CTCTAAACTC TGGATAATTA TTATTCATTC TTATGACAGC AACTGTGTAA TCAGCTGTG AAACACTGTG  
AAGGGCAAAA GAAAGAAAGC CAAAAATAT TGTGTTCTG TGCCAAGATT TTACAGCGAG CAAGGGAGAG TTAGAAAAGG  
AATCTGAGA TTTCAAGTCT TGGTCTCTT CACCTTTGCT TGGAAGAAA TATCCTTTCC CTTCATTAGC CAACACTTTT  
TTGATCCTGA GAGTAGGAAA GGAACACTG AGTCTTTTCA GTTGAAGGCC GTCCTTGCT GCTGGACTT GATCTATTGA

AGTGGTGATG GGTGTTGCGG TTTCAGCCAT AAAGGCATCT GGCATAGTAG GCAAGAAGGG CCAGAGACCC GAGGAGAGTT  
ATCTGTCTCT GTTAACTTCA GTGTATCCCT CTAGTTCCTC AGATGCACCT GTTCTGTAA ATATAAACAT GCATGTCATC  
AGAACAATTA ATATTCTGCA TACTGATCAT GACAACAAA TGTACCTTCT AACACAGACA CTCTCACTAG GATAGACCAT  
GTAGGAACAT CGAATTCAT TCAGTTAGGA CAGTGATGAT GTCTACATAT TATACCTCTG TCAAAACCTA CAGAATATAC  
AACACAGCAC AGAGTGAATT CTAATGTAGC CTGTGGACAT TAATGAATAA TAATGTATCA ATATTGGCCC ATCAGTTGTA  
ACACTAATAT AAGATGTTAA TAACAGGGGG AATTGAAGGG GTGGTGGGGA GATATGTTGG AACTCTTTGT GCTTCTGCT  
CAATTTTTCT GTAAACTTAA AACCGCACAC AAAAAAAG TTATTTTAA TTTTAAAAA GTATTGAGAG GGAAGTGGAC  
TTTCCAAATT CTCTCAAAGC AGGTGCGAGT AGTTAAGAAC ACAAATTTTA GAACCAGACT GCCAGAGTTT GAATCCTGGC  
TACACCATT ACTAGCTTTG AGATTTGAGA CAATTTACTT AACTTCTCTG TCTCATTTTC TTCATCTGTG TGATAAGAAA  
TAAAGTAACA GGCCAGGCCC AGTGCTCAC GCCTGTAATC CCAGCACTT GAGAGGCCAA GGCGGGTGA TCAAGAGTTT  
AAGATCAGCC TGGCCAACAT GACGAAAAA TACAAAATCT CTACTAAAA TACAAAAATT AGCTGGGTGT GGTGGCAGGC  
ACCTGTAATC CCAGCTACTC AGGAGGCTGA GGCAGGAGAA TTGCTGAAC GCAGGAGGTG GAGGTTGCAG TGAGCCAAGA  
TCATGCCACT GCACTCCAGT CTAGGCAACA GAATGAGACT CCATCTCAA ATTAATAAAA AAAAAAGTAA AAAGAAAAA  
TAAGAAATAT AGTACCAGCC CCTATCTCAG AGTTCCTAGC TTAGAAAAAT TCCAGAAATA TAATAAGTGC AATGTAAGGG  
TCAGTATCT TCATTATTAT TATCTATCAT AAATGAAATT ACACAATAA GCTAGATCCG TTTCTTCTCT CTCCTTCTAC  
AAAAATAAA GCAACTTTCC AGACAATAC CCAGGTGATG ATTTCTCCCC TGCTCCCTCC CTAAGATATT GGCAAGTTT  
GAGGGTTTCA GGAGAAACAG AGCATGTAGA GAAGATACCT CTCTCAAAAC CATTTGTGAT TTACAAGTCT TACTGATT  
TTTTGAACCT AAAGGATGTA AGAAGGCTTT TGGTAGCTTC CATCTGATTC AAGGCTTTGG CAGCTGCTGT GGAATACATG  
AGAACACTAG GTAAAGCACT GTCTCCAAC ATGAAGAGAG AAAAATATGT GGAATGTTCA ATGGCATGCT TTGTATAAGA  
ATGCAACTTA CTGGCAGGA ACAAATTTCT TTGCTGCAAA AGAAAAGACA AACAACCATT AATTCAGACT AAATGACTTT  
TAAGGATATA TAAATCCAG ATACAATATG ACTTAATTC TCAAGTGTG CAAACTCGAT GCTTCAGGGC CTCTGTAATA  
ATCAGAGCAC AAGCATGGCT CTGTGGCATC TAGGGTAAAA TGCAAAATG ACAGCCATCC AAAGGCCATA GCAGCTTCTC  
AATGCCAGCA AATAGTACG GGGTCATCTT GCCCAATTCA GCTCCCAATT TTTCAATGAGA AAGTCCAAAGT CTTAATTTAA  
ATGTGAGATT TCCTATTTTG TAAACGTCAG AACTTAACTC AAAAATGTTT TAAGTACTCT TAAACATGTA AGCCAAACAA  
ACCATGAGTG TAGTCAGATG TGCTCCATA TTCCTTATGA GAGACTCTCA AATTTAAGCC TGTACTCCAA ATAAATCTCC  
TTAGGAAGAA TTTTATCCAT TTCTCTAGA GTGCTCATCA TGGCAGTCC ATTGCACAAT TCCGGGAGGC ATCATATAAT  
TCAACATGAA TAGCACCCCC TGGAGTTGTA CAATATTAGG CACGACTAAC ATTTTATTTT CTGAAACAC TTCCCACT  
GAGTTGTACT ACTAATCTT TTCTTAATAC TTCTGCTTAA TTACTGCA TTTTATCCAG ATTCTAATTA TTGTTAAAT  
CAGTAAGCAA GACCATGACT TATCAATGAG AAAGAAATGT ATTTCAAAA ACATTTTGA AGTACATTTA CTAACCTCTC  
CACCTTTCCG TAAGCATTTT CGAAGCCAGA GGAGAAATGG TGCTAATGTC AGGAGGGAGA GTCCAGCAGC AGAAAGTCCA  
GCTACCAAGG GAATGTTGGA CTCAGTGGGA GCTAAGGAAG TAAGAGACGA AGAAAGGTCA TGAGGAAGAA TTGATGTTAA  
AGTCTCTCCG TCCTGTCCCT TTGGCCTTTT TTCTGTACAT TCATTACTAG GAGCAGAAGA GCTATCTAGT TTAATACAAG  
AAGCAGAGAT GTGGCATTAC AGGCCTTTGA GATCTGTCTC AAGCCACCTT TGAAGCTATT TCCACCATTG GCAGGCAGAA  
CTCTAATCTT CCAAGCTCGT TCACAATACC ACACCACACC TTGGTTAATA AACACTGCAC TTGCTTGCTC TCTTGCTCTC  
ACTCCCTCTT GTTTTCCATT TCCCCTTTCT CCTCTCTCT CTCTGTCTCC TTTTCCAGT TGTCAGAAAT CTACCCTTTC  
CATCAACATG CAACTTCTGT TTTTCTCTA TCCCCATACA ACTTAATATT CACAACCTGT CAACCTGGGC GAACCTTCTG  
GTTTGGATAT AATGAATAGT TGATTACTGT AACAAGATAG CTCCCCCTT TTCTTTTAA TCACCAGACA ACCACCATCA  
ATCAATGCAT CACCTTCACA GGTAGGTAGC AGGCCAGACC AGTGTCTGT GGCTCCACAT GTCCGAGCTG CAGAGCCATT  
GAGCGTCCAT CTTTCAGGAC AGGCGAACTT GCACACAGTG CCAACACCGG GCTCCCCAT GCAGCTCATG TTGATCTTTC  
CCGGAAGTGC CAGGCTTGAA CATTTTACCA CTGCAAAATG TAGGTACACA GGCAGAGTTT CAGAAAAATC TACTGGAAAA  
CTTCCAAAAC TTGCTTAAAA GTCAACAATG AATGTAAGT GTAAGCGCTA CTTAGTTTTC AGCATGTAGG AAATAGGAC  
CAAACCCCTT TGGGGCAATC TAGGTTTACA AACTTTATGA AGTATTGAC CTGTACCCTA AAAAAAGTCTG CACTCAATTC  
TACCTTGGA GGAAGGAACC TCTTCTGTCC ATTGTCCCTG AGATGTGCAC TCAAGTTGAG TTGATCCATG TAATTCAAAT  
CCCTCTCAC AGCTGAAGGC ACAAGAGGAC TTGTAGGTGA ATTCTCCAAT AGGGGAATGA GCACACCTCA CCAAACCTT  
CGGGGGCTGG TGGACAGCAT CGCATCTCAC AGCTGGAACA CACGAGAGAG CACTTTAGAA GTTTGTTTGC ATCTCCAGCA  
ATACGTTTCC CAAGGTAACC AAGTTCCCAA GCTCTTCAAT AGTCTTTTT ATCTTAAAAA AAAATAAAAA CAAAGACTGT  
ACCTTCACAT GTGGGCTTCT CGTTGTCCCA CTCCCTGTG GGGCCACATT GGAGCCTTTT GGATCCCTTC AACACAAAAC  
CTGCTCACA GGAGAACTCA CAGCTGGACC CATAACGGAA ACTGCCAGAA GCACTAGGAA GACAATTCAT GTAGCTCGC  
TCGGGGTGG ACAAGGCTGT GCACTGGAAG GCTGAGACAT CAAAATGATG GTCAGAAAAAT ATTGCAGTGG AACTAGAGAG  
TACTTGGCGT TTGTGAGTG AACCCAGTTC ATTCAAGCAA CACTTGGAGA ACTGAAGATT CTTTATAATT CCCTGGACAA  
ATGGGAAGAT GGCTGTGTTT TCTTTGAATT TCAGCCCCCT CACTGATCAT GGCATAATT AAAAGACTAA TTAATCAGAA  
CATTAGTTCC TGAGCACTGT TCTTCTAACA CAAAAATAA ATTATGGTCC AAGGAAAGAT TTCACGCAGT CTGAGGACAA  
CATATGGGTC ATGGATGTTT ATAGATGGTG CAAAAAGAA AGAAAGGAAA GCACCCCTAT AAAATTTGTC TGTTTTGCAG  
TTTGGTTTT GTGTTATGTT TTGCTACTGG AAATCAATCT AGTGGGCTT TGGTAGGAC AAGGCCAGTG CCTGATAGTA  
AAAACTGCTT GTTTTCAATA TCCTTGCTCT CACTTTAAAG TGAATTAATA TTTACTGCTT ATATATGCAT CAATACTATC  
TCTGTAGCTG ACACCATGCT TGAACAGTC TCATCACTGC TAATTATGAG CCATTTCAGA AGACAGGTGT GATGAGAGTT  
TTACATTCAA ATCATGTTCT CATTATTCTG CTTCGGAAT TTTCTAATAT GATTCTTTA GATTAAGAAT TCTGTCTATT  
CCATGCTAAT GTCTACAAAG TTTTATCAGC ACATCACAGT TAAAAAAGAA CAGCAAAGAA TTCATTCTTA ACACATATGA  
TCCTTTCCCT GGCCAAACAT TAGTCTTTT AAATGAATCT CAAAGATACG AGGGTTGCTC ATCAAATCTG ATTTCTATAG  
TTAAAGTGGG TATTGGTTTT TTTTTCCT GTCCAAGTT GAAGATGGTT GTTCTTTAAG AAAGTATAAA TCGAAGGATC  
TCAAGCTTAC CTTCAACAAAC TGGGATTTGC TGTGTCCACT GGCCTTGAGT GGTGCATTCA ACCTGGGCTG GTCCTGCAA  
CATGAAGCCT TCCTCACAGG TGAAGTTGCA GGATGATTG AAGGTGAAC CTCCAGCAGG GGAATGGCTG CACCTCACAG  
AGCCATTCTG AGGCTGGCGG ACGGCCCTGC ATGTCACAGC TGTAACAAAT ATACGCATTG ATATTAGCAC GGCCTAGAAT  
TAGCTTGCCC ATTTCCAGTA TGGGTTGAGA GAAAGAAATG TCACAGTAAG TCTCCATGTG GAACAACCTC ACCTTTACAC  
GTTGGCTTCT CGTTGTCCCA ATTCCAGAT GAGGTACACT GAAGGCTCTG GGCTCCCAT AGTTCAAATC CTTCTTCACA  
GTCAAATGTA CAGGTTGTGT TCCATGGGAA GCTTCCAGGG TTTTGGAAAC ATTCCAGAA CCCATTGGCT GGATTTGTCA  
CAGCATCA CTAACCACT GAGGATTTTA AAGGACCA TGAATTTTAC AGAAGAAATGA TCTTTTCTCT TCTTATGAG  
CTGGGTGCTT AACAGAGTGA GGAAGCTGCC TTCAAAGGGT AGATCCCAAA GTCCTATGTC AATCTTAGG GACATGCACA  
GCCAGAATAA AAGCTTTTAT TCTTTTTCAT GGATATTCTA TCTTTTCTGA TTCCACTTT GCCTATGCTG AGTGGTCTCT



AATCTATGTT ATCATTACG TGAGGTAAAA ATTTAAAAA AATAGATTCC AGATTAGGAG TTATGACTAG TACTGACATA  
CGTAGGCTAT TCATTTATTT TAGCCCATCA GAGCCTGAAG AACTGATTTT TCTTTTTTG GCCTCTGGTT CAGAAAGATA  
AAATTAAAGAG AGAAAAAGAG ATACTAAGAC TGCTTGACTA TACTGGTCTT AAGTTAGTCC CATGGCTTGG AAAAGTTAAA  
CAGGGAACA AGATGAGAAA TCCATTGAGA TTTCTAGAGC TTTATTGTTT TATGGTCTCC CTACAAATC ACCAGAGCCT  
CAGAAACACC CATTTCAGC ATAGAATAAA AAAACCTCTC TCAACCCAAG CAGGTACTGG GTTGGCAATA TACATTGGCT  
GAGAGAACA ATTGTATTAA AAACAAAAAC AAAAAAATA CTTTCCCTGA AGTTTGAAG ATGTAAGTTG AATCAAAAA  
CAGAAGCAAT GAGGGATGAG TTACAGAACG TTCTGTGCAT TCTCAGAGGG ATTTACCATT GCAGGCTGGA ATAGGAGCAC  
TCCATTCTCC AGAGGACATA CACTGCATGG TCTCCATGCT GCTTGGCAGG TAACCCCTAT CACAGCTGAT AGAGCAGGAA  
GAATTGAGC TGAAGTTTCC CAGTGGGTGA CTGCAAAACA GGCTTCCATG CTCAGGGGAT TCCAGGGCTG TACAGTTTCA  
AACTGAAAAA GAAACCCAAA TCAGTTCTGC TCATCTCTCA CCTTTAACAG ATAAGAACAC TGGAAACTAG AACTACAGTT  
TGGTTTTTTT TTTTTTAGT TAAAAATTT ATAAAAATTC TAATGGAATT TGTAATTTG ACTGTAATTC TACCCCTTTT  
CTTTTATTCA AGAAATGCT GATCCATAAC AACAACAACA AAAAAGCAGT GATGACAACC ATAAAAAGA AATATTGAGT  
GATATGGGA GAGTAGTGA ATTGTGTTA CCTCAAACT GTTCAAAATTA TATGAACAAA CACAGCAAAAC TTAGGTACCA  
CAACAAATTT CTGTACTT TTCTCACAAC TGCTAAAAAT ACTACAGTAA GCTTCCAACC AGGATGAGAA CCATTACAAA  
AGCTATTAT CAAATTTAAG TACTAGAATA CATTACAAAT TTTAAAAACC TAATGCTGCA CTGTCTACTA TAGTAGCCAC  
TATCTGTGTG TCTACTCAA TTTAACTTG AATTCGTTGA AATCAAAATA CATTAAAAAT GCTGTCTCTC AGTGTACCA  
GCCACATTC AAGTACTCAA TAACCACATG TGGCTCATAG GTACACACTG GAAAACACAG CTATGGAACA TTTCCATTAT  
CACAAAAGCT CACTGCACA ACGCTGTGCT AAGGAATCTT GGAGAGAAGC TCATCTAAT CTCTAATGT ACAAATTTAG  
GAACTGAGC CTCAATTCAT TCAAGTGACT TGCTCCATGC TACACGGCTA GTCATTACAG AGCCAGAGGC CAGAGCATGA  
ACCAAGATAC CCTGGACTCT GTAATCACT CATTCTACT GCAACGCTT GTTACCACCT AGATGAGGTG AGTACATGTT  
CCTCGCAGG ACACAGAATT ACAGTTTATT GAATGTGTC TGTGTGCCAG GCACCATGTA ACCATGAGCC TATGAAGTTC  
ACACTATTAT TATCCTCATT TTACAAATGAG AAAACTGACTA TAGAGAGTTA AACTATCTTG TCAAGGTGCC AAAATAAATA  
ACTGGTGAAT CTAGGACTCA AACCAGCAG GGTCTGACT CATAGTCTCA GCTCACGATC ACCATATGAC ACCATCTGCA  
CCAGGGAAGG GAAGGCATGC AGACCTGACT CTAATGCCAG CTAGGACGTG AGATGGTGT ACCATCTCAA GTGAAGAAAG  
AGGCAAGAAC CAGACTTACT TTGCTCACAC TTGAGTCCAC TGAAGCCAGG GTCACACTTG CAAGTGTAAT TATTGATGGT  
CTCTACACAT TCACCGTGGC CACTGCAGGA TGTATTGGTA CAGGCAGCTA CGGAAAAATAC AAAGCATGAT GAGGAGGACT  
ATTACTGTG TTACTAGTAG TGCTTTGAT TTTAGAAATCA ACAGTGTCAC ACAGAGACAT CAGCAGCTCT ACAGAGTGCC  
ATAGACTTTA TATAAGTGT TTTACAAAGT TCCAAATCTG AGTTTCAGGC CCACCTATCC TAAACCTTGA TGCTAATGTA  
TAGCTGTGGC TGGCACCTAC CGTAGAAAA TTAATCTTCT ACAAACCTCTG AAGACAGTTC CCTACCACA AATAAAACAAG  
TAATTTAAAT ATGTATTGTG TGTGTGCATT TTTATATGTA AAGAACTACA TATTTGCCA CAGTATTTAT ATATATTTA  
TATATATACA TACACACATA TATGTGTGTA TATGTGTGTA TGTATATATA TAAAAATGAT ATAAATGCTG TAGGCTATAT  
ATATATACAC ACACACATAT ATGTGTGTGT GTATATATGT GTGTGTGTGT ATATATATAC ATATCCACAT ATTCTTGCCC  
ACATTACAC AAAACAGCAA AAGAGAGAAA CTTTAGCAGT TAAACAGAAT CTTTGGAAAC ATAAATGAC CACAATAGAG  
AGCAGTTTTT GCATGCTGTA AATTGCCAA GATGCCACA CACTGAAACT ACCTCCCAT GCTGCCGCAA ACTCCTTACC  
TGTGTAGCAT AGGGCAAGCT TCTTCTGCT GCACCTCTCA TCATTCCACA TGCCACATC TTTTCTCTC TTGATGTAGA  
TCTCCACGCA GTCCTCATCT TTTGCCAT TGTGGGTTC ACCTGGAGCC CAGTCTTGG CTCTCTCTGT CAGAGGTTTC  
TGGGTCTCTA CCCAGACCA CACATTGTTG ACTTTCTGA TTCCAATCCA GTAATAACTT GGTGAATAGC TCAATATGGA  
GTTTAGGTAC TCAATCTCTT CTTTGTGTTG AATTGCAACC AGGTGTGTGT ACCTTGTCTG ACAATAAGCA CTGGCCTCAT  
CATAAGTCAT AGCTTCCGTG GAGGTGTTGT AAGACAGGC TCCACTCTCT TTAATGAGAA GCATAGTGG GAGAAAAAGA  
AAAGAAATGG TAGGTTTGG TACTGTTGT GTTAACTCT GACAACGTG CTTTATTG TCTTATTTT GGCAATGTTT  
GTGACATGGC CCAGACTTTT CTCATCTTTT CAAAAGTAAG AAGTACGTAT GAAGAAACAG CGACTTATTG TTTATCTCT  
TTGTGACTGC CACCCACTAG GTACCTTATC CACTCTACT CACAACATTA TAGTATACCC ATTTTGTAGT AGAATAATA  
TCAGAAATAC TAAGCTTTAT TGAGCACTTA GTATGCACCA AGAAGCACTG TATGAGGTAC TTTCCATGAA CCATGCTATT  
GAATCTCAC AATGCATCTG GGAATAGGT CATTATGATC CACTTTTAC ACTTAAGGAA AGGGAGACAC CAAGAGGTAA  
AGTAAATGAC CCAAGCCCA GGAAGAACA CATTGCAGGT AGAGGTCAGG GATGCTGCCA GATATCTGT GCAGGACAGC  
CCCAGACAAG CAAGGATATT TCAGTCTGAA ATATCTATG TGCGAGAATG AGAAATCTTG GTCTAATGGC ACTGACTTAC  
CCAAAGTGAG AGCTGAGAGA AACTGTGAAG CAATCATGAC TTCAAGAGTT CTTTCCACC AAAGGTTTAG GCTTGAAATA  
CTTCTCTGGG GAGATAAAAC ACAAATGAA TTAAGAAGG AAATCGTGGG TAGCTAGTTA CATTATTCTA CCATGATGTT  
TAAGGAGCA TCCTAAGATT TTGGGCAAG GACACTAGTG CAATAACTT TATTTAGAG TTAATCAA TAAATAACA  
AATTTAAGA CTTTCATTAT TTAGGTCAA GAGAAAAGAC AGGTTTATG TACAATACAA TAAGAGCTTG TACAGATGTG  
GTTTTATTA GAAGGCTTT TGCATATCTG TGTTTCATGG CCCGAGGCTG CCCTTATAA CGGTTCTGCA CTTACCGTTT  
TGGGAAGCAG TTGTTCAAAC ACAGGATCTC TCAGGTGGGT ATCACTGCTG CCTGTCTC AGGTCAGTAT AGGAGTTTGG  
ATGTGAAGTC AGCCAAGAAC AGCTGAACAC TACTCGGCT GAGGCCCTT TATAGGAGGG ATTGCTTCT GTGAATAATA  
GGAGGATATT GTCCACATCC AGTAAAGAGG AAATCCCAA TGGCATCCAA AAATTTTCCC GGAATATCC ACGATGCTTA  
AAATTACAAT GATGTCAGAA ACTCTGTCTC TTGAAGCTAC TTCACCTTG TCCATGCCTT TATATCGTAT ATGCAATTTT  
ATTAATATGA CAAAAATGCA TGATTTTAA TTATAATAAC ATAAAGTCTA TGTCTTAAA AAGTTGTAAG ACTTTGCTTG  
TTAGTAGTGT CTCTCATGTA GTTGTGGTAG TAATTAGAAT TTCAGAAACA GAAGGAAACC AAGAATAGGT TTGTCATCCA  
TAGTCTACTA CTTCAATTT CTATTCATA GCTGTGGATA ACCAATCACT ACTCATTTT TCTCTCTT TCACCTGCCA  
ATTCAACATA TTTAATATGC ACTGTCTCAC AGAGGAATGA CTCACAAGGT AGATATTAAT CTTAGATTTT TGCACGGCAG  
TTATGCTTAA ATTAATATAT TATCTAAAA TAATATCTAA CACTCAAATG GTTAAAAATA TGCTTATTT TAAAAAAGA  
AAAATGGGA ATAGATATT ACATCTGGGA AAGTTTCATG GTTGTTCAG TGAAGAAAT AAAAAGGAGG CCAGGCACAG  
TGGCTCACGC CTGTAATCCC ACCACTTTGG GAGGCCGAGG CAGGCCGATC ACCTGAGGCC GGGAGTTCAA GACAGCCTG  
ACCAACATGG AGAAACGCCA TCTCTACTAA AAATACAAA TTAGCTGGG ATGGTGGGC ATGCTGTAA TCCCAGCTAC  
TCGGGAGGCT GAGGCAGGAG AATCGCTTGA ACCCGGGAAG TGGAGGTTG AGTGAGCCA GATCACGCCA GTGCACTCCA  
GCCTGGGAAA CGAGTGAAAC TCTGTCTTAA AAAAAAATA AAAAAAGAA AAGAAAGAA AAAAAATAA  
ACGGAATACT ATATATATAT ATTTAATTGG TCAAAATTT GTTAAAAAT TTTGAAATGT TAATGTGCAA AGAATAAAAA  
TTCTCCACA ATGTTAACAG TGAATACTC TGGATGGCAG GATTTGGGAT AATTTTATA TCCTTCATTA TTATTTTCAG  
GATTTTAAAG TTTTTCATA TTTCCCTTT TTTACCTTT ATAGTAACA GAATACAGTT TAAAGAACT TGTCTCTAGG  
CCAGGCATGA TGGCTCATGC CTGTAATCCC AGCACTTTGG GAGGCTGAGG TGGGTGGATC ACCTGAGGTC AGGAGTTCCA

GACCAGCGTG GCCAATATGG TGAACCCCTG TCTCTACTAA AAATACAAAA ATTAGCCGGG GTGTAGTGGC GCATGCCTGT  
AATCCCAGCT ACTGGGGAGC CTGATGCAAG AGAATCGCTT GAACCCAGGA GGCAGAGGTT GCAGTGAGCT GAAATCACAC  
CATTGCACTC CAGCCTGGGC GACAGAGCAA GACTCCATCT CAAAAAAGAA GAAAAAAGA AAAAGAAAAA AAAAGAAATT  
TGTTTCCAAA TGCAACAGAA GGAGATGTAT GTGGTATCCT ATATTCCTGC TCTTCATTTT GACATTTCTT CTGGGTGATT  
GTATACATTG CCCATCTCTG CATCTTACCC TATCTAAATG ATGGTAACAG TAAATGGGGA TCATTTTAAT TTCCATATTC  
TGTAGGTTTT CAGAGCTCAA GTCAAGCTAA TATTCTATAT CTACAGCCTT TCAAAATAGG AGGTCTATCT AAAAATGTAC  
TGTCAGCAGA CCTGAACGAG TAGTGGTAAA AGCCTCGITT TTCTCTTTAC TTGTAGCAC TGGTCTTTCT GTGTTCAATA  
AGATGTCAAG ACCCAAAAAA AAAACAAGAA AAGAGAAGAA AAATCCAAA AAAGACAAC GATTAGAAAA  
AAATAACTTA ATTAACGAAT TTAATTCAAC CCCTATCAAA AAGCATAGAA TTTATCCCT CCACCTTACC ACTCTCTTAC  
ATGATCCAGA TACTGACATT ATTCCAATTC TTTATCCCAC TTTACTTAGC TCAATGTGGT TGTGCTTCA ATAAATTCAG  
AAGAGTAATC ATCATATAG TGTTTATTTA GATTTTAGGG CAGAATGTCA AGTTGGGTGA ATACATTATC TGTATGTATT  
TTATTTTAA TAAAGTATGA ATACATAATC TGCTATTTT AAAAAGCATG GTCAAAATGTG TAGAGTAGCC AAATCTTAAA  
AAACAATTTA TCTTCGATAT CAATAAAGTA CCTAATAATT ATATTGCTAA TAGAAATTAG TCGTTAACAT CCCTAGATAA  
CTAATTTAT TATTGCGAAT TTTTCATAAC TAAGTTTATA GTTTATCTCT TCCCCTTTT AAAATTAGTT CAAAGATATC  
TAAAAATAGC CCCAGTGGTG ATGAAGTTTC TATTTTACTT ACATATATAT GTCTGGACC CCCAATTATA ATCTCTAACA  
TTTATTGAGT GCTTACTATG TGCCAGGCCA TATCTGAGC ATTTGTATG TTCACCTATT GATTATTCAA TCCGTACAAC  
AGCCTAGAA ATAGGTACTC CTATTATCCC CATTTTACAG ATGAGGAAAT TGAGAATCTG GGGATTTTAT CTCATTCAAA  
AGCACAGAGC TAAGGGTTGA AACCAGGCAG TTGATATCCA GAGCCCACTC CCTTACCTGC TACTCCAAAC CATGATTTCT  
TTTGTGTGA TGCCCCGAGA TTCCTGTTC TACCCAAGTT TCCTGTACTC TTCTGCCCT CTTCTCTCTG AGACATCCTT  
GACCATCACA GCTCTCCACT GAGATAACTG TGTCTGGGT TCTGAGACAT GGGGGCTGGA AGGGACCCCA GGGACAGTGA  
GCAGTAGGGA GAGGATGCAG TGAGAACAGA CCTGGATCC CCGGTGCATA GGCAGGGAGA AAGTGGACAA  
AGGAAAAAAC AAGCAAGGCA GGTGGAGCCA TGCCTAGGTA AAGTTGATCC CTAAGCCACA GTTCCAGAA GTTCTGATT  
CAAAAGCAA TTTTCTCTAA GGTCAAAGGG CAACTGATT ATCTAAAT CTAACTGAT TATTTCTAAA TTGAGAAAGC  
TTCAGGGAGA GATCCCAATA TTCGAAGGAT AAGAGAAATG AGGAGTGGA GAGATAGGTG ATGACAGTA ACTTAAATGT  
AGACTATATA TAATATATAA TATATGTAGA GTATATATAT ATAATTACAA TATATTATAT ATGTGGAATA TATATTATAT  
TTATATATAT TTATATATTT TATATATATA GATATTTTAA TATTTTATAT ATAAATATAG ATATTTTAT ATTTTATATA  
TAAATATAGA TATTTTATA TATATTATAT ATAAATATAT GTAAATACT GTGAAAGAAG AATAGAATCT TGAGACCTCA  
AATCACTAT GCCAAAGGGA AAGTTAAGCT TGGGAAATGA GTCATGCAAA AACTGCCCTC CTTTGTTC CAAATACCTG  
TAATTTTACA TGCTTACTTT ATCTTATATA AAATGTAGAT GTACTGAGCA TGAGATCCAT GCATAATTC CTTCTAGTCC  
CTTCTTTTAA CATGTAAAGT GTAGACTCAC TGAGTGTAC AGGCCCTTG CACAATGTAA ACACATGTCT CATTTGCCAAC  
CCATCTTTCG TTTATTTTCT TCCCCTCTG CTTGTCTTT CCCCTCTAAA GATGGAAGTT CCCAAATC TCTTTGAAA  
AAGCGCAGGT CACAGATCCT ACAGTGATTT GTGTTCTTT TACCTGGGAC AAAATAAACC TCTAATCTGT TGAGATATGC  
TTCAGTTACT TTTTGGTTTA CAATATGTAC ATGTATGTAT ATAATTATA TGTATATAAT ATATGTACTT GTTTAAACCA  
GAGGTATGTT ATCAAAATC CATTATCCT TACAATTACC TGCATTCTCC CACAGTATTT TCTGTGTCCC TGCCCCGAG  
GTTGTCACTG CAAATCAGGT ACATGGATAC TGGGAGCTGA TGGGCTCCCC TCTGGTACC TGGGCTGCTG AAGGGGCCAT  
AGACAGACCC AGCTTTCCTC TCGTGGAGAG CCGCTGGGCC AGCCTGCGT GGGAGTGGGA TTACAACCAG ACTATAGCTT  
CTTCACTGC TTTTCTCTAT CAGGATTTCA TAAGAGGCAA TCGTGTGTT TTTGAGGTG GGGGCAATC AGGGGAGTT  
GAAGAGGAAA TTGGGTAAGA TTTGAATAGT TGGGCATGTT GAATATTATG AATATCATCT CCTCTTCAA ATAATCCAAA  
ATATACCCCC AAGAAACAGG CTGATTAGAG GTGCTTCAAG GCTCCACTGA ATCTCCCAAG CTCTGAAGAT GTAGCTAGCT  
GTTACCGGAT TGCCGGTTTT CAAGCTCGC CTCACATGGA CCCTCTGGC AGTTCTCGC ATGGGGGAAG CATCCGCTAC  
ATAGATGGGA ATGAAAAGAG GAAAGAAGAC GGTGCAAACT CAGGCACACC CCGGTGTCTG CCACCAGTGC TATTTAATCT  
CTGAGGTGTC ACCCTTCTG GCTTTATTGT CTCTCTCG AGTCTCTTG TCCTCTCTC CACACCTTT AATCAGGCAT  
CAAAGACTTT AACCAGTTTT GCTGTGTGCC CAGGCTCACT CATCTCACT TTTATGGCAA AGGGAGTGGG AGACAGAGAG  
ATAGCCAGAA AGAAGAGATT GGGGACCCCA AGACAAATGT TAGAATTTTA ACCAAGGCCA CCTGTGGAC AGGAGATTAT  
TGGGTTTAGT GGAAAGCAGC ACTGGCCACA ACCACACGTG GCAAAAGCAT CTATCGAGGA GTGAAGTTAT ATTTGGTGAA  
TGTGACCGGG AAGCAGGGGC AGTGGTGTCC TCCTGCCTC CTGAGGCACT CTGTTCCCTT ACCTCTGCGA AGGCTTATTT  
TACCCTGAG TGCTTAGTTT TGAAAGCCTT AGTCCCTCT CTCCATAAA AAAGCTCTAC TCTGCTAACA TCTAAGTTAC  
CTTGGCAGG TCTTAGGTAG AGGGAGGAAA TCCCAATAAA GATTCCACCC TATCTGCAA ATACAAACAT GGTATTTCTT  
GCATTTCCAA AATTGTGAAA GAAAATGTGT ATCACCACAG TAGAAGATGG CATTTTTGT TTGATCAAAA CCTAAATATA  
TTTGATGAAA ATGTGTCTGG TTCTAAGTTT ATTTCCAGA AAGCCATGTT TACTCACTTG GAATTTATAG ACATCTTATA  
ATATCTGAGT CGAGTAGGAG CTCCGGGCTC TACCTACTC TTTTCTCCA CCCCAGGGG GAAGTGTAGG GTTCTCAGAC  
TTTGAATAA AGAGGAATCA CCTGGACAAC TCACCTAAAA TGCACATCTT CAGGTCTCAT ACTCAGAGGC TCTGACTCAA  
CAGGTCTGGG TGGCGCCCAA GAATTTGGGC TTAAATGAG TATCTCAGAT GATTCTAATA CAGAATGTG AAGATGACCA  
GATCCTATCA CACTTAGATG TATTGGCCTA GGGCCACCTA ACTTGGAGAA AATGTTAGTA AGACCCCGT GTTGGTGCTC  
AGCTATAGGT ACCAGAAATT TGATCAAAAT TTAATCAT TGTGACACT CTCTCGGA CTGGAAGGCC AGACCCAC  
TTGTAAAGTG CTGGGAAAAT ACAAGGAAAA TTAGGGTGA GTAGCATTTT GAATCTTAC ACATGGAAG TAAATGTATA  
AGAATCTTA CCAATAAAAA AAAAGCAAGA GAGAATAGCT GCTAAAGAAT TAACACAAAT ATGTATATAT TAGTTATTCT  
CTTTCTCTCT CTGATTCCAG AGGACTTTGT AATTCCACTA ATTCTTCTG AGCTCCAGG ATGATCTGAG ACTTGAATTT  
TTCATGTGCT TTTTGTCTC TATTTGGCAG CATCTTATCT TGAAGTTTCC GCTTTCTGCT TGGGGACCTA AAACTAACT  
AATGGGAATT TCTTCAAAAT GAGCAAACTC TGGTGAATTC CCAAGCCGGA AGAAACAAGT GAGGATCGGG CTGGTTAATT  
AAGAGAACTT TTCTGAATG TAGCCAGCT GTTCCGAC TGTTGTTAA ATGAGGGAAG AAATACCCCT GGATTTTAGA  
AGAGCCCTT GTTGTTTTC CTGGCCATT TGTGCTGCT GTTTGTTAAG TCAGAAATTT CTTGAAGGCT TATTATTAGC  
TTTGTCTCA CGTCAGAAAA CTCTGCTCT GGCCACTTTT AAACATATAA CTGGGATTTT ACTGTATTAG AAAATGTAAC  
AATTACAGAC AGCACTAAAA GGACACCAA GGGCAAAGAA AATGGGTAAC TTTTTTTCT TCCCAAATC TAAATAGGT  
GATTTTGGAG AAGTAGGAGA AAAACCTGGA TTTTCTAGAT CTCTTAGAG CTCAACAAC GATATAGTTA ATTATGTAAG  
TCTTTGATAT TTGGAAATGA TTGGATTAAC CGGATAACAA TGAATATTTA AATACAGTGA TTTGGCCAGG AGCAGTGGCT  
CATGCTGTGA ATCCAGCAT TTGGGGAGGC TGAGGCGGTG GGATCACTA AGGCCGGGAG TTCCAGACCA GCCTGGCCAA  
CATGGTGAAG CCCCCTCTCT ACTAAAAATA CAAAATTAGC CAGGCGTGGT GGTGCAAGAC TTGAATCCCA GCAACTCGGG  
AGGCTGAGGC AGGAGAATTG CTTGAACCCG GGAGGCAGAG GTTGCACTGA GCCAAGATCA CGCCATTGCA CTCCAGCCTG

GGCAACAAGA GCGAAATTCC ATCTCAATAA ATAAATAAAT AAATACAGTG ATTTAACACA AGAGATTTCT ATTTCACTAC  
AATGAGCTCT GTCAGTGGG CAAGCTTCTT TGCCTCATTA AGTCTCAGAT TTCCCGAGAG CTTATTTATT TATACCAAGA  
GTGCTTTACT ACCGTCTCTG CTAGCTGTGA CATAATATGA CAAAAGGTAT AAATATGGGA AAAGGCACTA ATTTATATCA  
AAGCGTTCTT CGTTTTCTT TGCTGTGAAG TTTTAGTCTA ATAATTCATA AGAATATACC ATATTTAGAG TGTTTACTAT  
GCATGGGCCT GGCACCTCAC ATACATTGCT TCTTACAAAT TTTACAAAGT GAAAGGTAGA TATTAATCTC ATTTTATGGA  
GGACAAGATA GAGATCTGGA GAGGTTACAT AACTTGCCAG TGTTTTTTCA GTTAATAAAT GGTAGGGTGG AGATTCAATC  
TGTGTTACTC TAAAGTCCGT GTCTTTTTA TTGGCTCCAT GCCTACTCAG ATTTAAATCT CAGCAGGGAA GTAAACCTTA  
GTTTTTACAT GAGAAAATGT TACAGCAGCC TTCTCGGCTT CCTTTACCCC CATCCAGAT TCACGAGCTT AGTGCCTTAG  
ATCGGGTTC TTTAGAAAGA GACCTCGAAA TAAGGATGTG GGTGCCAGTC ATTTATTGAA AAGATGATCC CAAGAAAGCC  
TAGTAGGAGA GTGAGGAAGT GAGATGGGGA AAGGAAGAAA TCCACAAGA AGTGTGTTAA TAAGCAGGTT ACCGCTGTGG  
GCAGCCATGG GGCTCAGCTG CACTAACAAA CTCTGTCTAG TACAGAAAAC CTCAGGGTCT CCCCAGGAG GGGCAAGAAG  
TCTGCCTAGG GTATATATCC GCCAACTCAG TCACTGGCTG AGAGCTGATC CTGGGAGGGC ATGGTTAATT CCTCTGCACT  
TTCAAGTGGA TTCCTGTGGT CAGAAAAAGC CCTCTACAAT GAATTCAGTA TGCTTGATT TAAATCTGAC ATGATCTGAA  
TGCTGTGTTG GGACAGGGTG GGCCTTATTA GTTTCTGTC ATTACTGTAA CAGATTACTA CAAACCTGAT GGCTGCAAAAC  
AACACATATT TATTATGTC TAGTTTGTG GGGTCAGAAG TACAGGTTAG CTCAACTAGT TTCTCTGCTC TAGGTTTCAC  
ATTGCCAATA TCAAGGTGTC ATCCAGTTGG GCTCTTCTG GGAGGCTTGG GGATGAATCC ACTTTCAAGC TCATTAGAT  
TGTTGGCAGA ATCCAGTTCC TTGTGGTTC AGGACCAAGG TCCCTGTTGC CTGCTGGCT GTTGCCAGG AGTCATCTT  
AGCTTCTAGA GACTACCTGT ACTCTCTGAC TCGTGTCTCC ACTTCACCTT TCAAACCAGC AGCGGCTAGT CGAGTCCCTC  
TCTTCAAATG TCTCCAACTG TGCTTACC TCATTTCTCC TCTGTGTACC ATGTCTGCCT CACTGCTTG TAAGGGCTCA  
TGGGATTACA TTGATTTAT TCAATCCAGG ATAATCTCCA TATTTAAGG CTAGCTGACT AGTGATCTTA ATTCCATCTA  
CAAAGTCCCT TCCAATAGA CTGTATTAGT CCATTTTCT GCTACTGATA AAGACATACC CAAGACTGGG CAATTCACAA  
AAGAAAGAGG TTTAATTAGA TTTACAGTTC CACATGGCTG GGGAAAGCTC ACAATCATGG CAGAAGTCAA GGAAGAGCAA  
GTCATGTCTT ACATAGATGG CAGCAGGCAA AGAGAGAGAG CTGTGTCAGG GAACCTCTCT TTTTAAACCT ATCAGTCTC  
ATAATACTTA TCACTATCA CAAGAACAGC ATGGGAAAGT CTGCCCCCA TGATTCAATT ACTCCACCA GTCCCTCTCC  
ACAACATGCA GGAATTCAAG ATGAGATTG TGTTGGGACA CAGCCAAACC ATATCAAGTA CTTAGATTCA TGTTTGATTA  
AACAACAGG GAGCAGAAAT CTTAGGAGT GGGGGGCATC TTTAGAAATC TGCCCCACCA GGCTGGGCGC GGTGGCTCAC  
ACCTGTAATC CCAGCACTTT GGGAGGCCAA GGTGGGTGGA TCATGAGGTC AAGAGATCGA GACCACCCTG GCCATGGTGA  
AACCCCATTT CTACTAAAAA TACAAAAATT AGCCAGGTAT GGTGGTGGG ACCTGTAGTC CCAGTACTC AGGAGGCTGA  
GGTAGGAGAA TCACTTGAAC CCAGGAAGCG GAGGTTGAC TGCCCAAGA TTGCGCCGCT GCACTCAGC CTGGGAGACA  
GAGCAAGACT GTCTCAAAAA AAAAGAATTC TGCCCATCAT AGTAGGCTGT CCTACAGAGA CATAACCCAG GAATTAGGTG  
AATGGCTAAC CTAAATTAGC ACTGTGATGT GTTTCTGAC TTGGTCTTA TAGCTCTCT GCTTAGATGT GGAACCTAATC  
CATGAATGCA AGGGTTTGT TAGAGTTTA AGTGGGAGT AAATATCCAA AGTACAGGAG ATATTATGGG TGCCTCATCC  
ATGTCCTCTT GGCATTTATC TTTCTGGAT AACCCAATC TATTAGTTT TATATCTCAC TGTTCCTAT ACTCTGTGAA  
CTGATGTCCC ATAAATAGAC ATTTCAATTT GCCAGTCTC TTGAACAATA ATTACGATTA TTAATCTAGC AGTTATCATT  
AATTGGCCAC TTCACATTAG ACACAGCACT TAGGACTTAA GAATACCATG TCATTGTATC ATCATAATAT GGTGAGGAAT  
TAAGTATTGC TATCCAAATT TTACAAAGAA GGCAGTGAAG GTTAGAGTTT AAATAACTTG CTAAAGATGT CATAGCCTGT  
AAGTGACAAA ACTAGGACTC AAATACAGGT CCATCTGACT CCAAAGTCTA TGTTCTTGGC TACCACACTG CCTCTCTAC  
AAGTGACCTG TGGTTTTACT ACTATATTCA CACTCTACTA ACTTTACCAT CTCCCATGAG TCTGTCTAGA GGAGGGCACA  
CACAGCACAG AAAACACATG AATGCAAAAT AAGGAAGGGC CTACTTACTA CACAGAGCCA TTCTAATACC TGATGTTTGC  
TCTAATCCAG TTTACTATT AATTAGTTG TGTTGCCCCA GTTTTACTG AGAAATGGGG ATAATTTTGG AAGTCATAAT  
GATGCCTTCT TCTCATAGGG TATTTTATT GTTGTGTAT CTCCAGGCC CAACACAGCC TGGCTTTTGA TAAATGATCA  
AAAATACCTG TTGAATGAAT AAATGGAGTC ACCTGAAACA TGTTAAACAT TTGTTTATGT GTCCTAATCG TGGATTTTCA  
GATAGTAAGC ATCTTAAAG GAAAGCATGC AACTGTTCT TGCTACATTA ATTTCTCACA ATATAAAAAA AGAAAAGCAT  
CTGAAAAAG CTGCCAGCCG CTGTGTCTCC TAATATCAAA CTGAGCACAG ATATGGAGAA GCTAAGGGAG AGGGATGATG  
GGCCATGCC CTAACTCAT CATGGCAAAA GTCTGGGGG TCAGACCCGA GGAGAGCAGG AAGTGTCTTT TGAGGGATAC  
ATTTCCACAG TGGAAATAAT GAGACTTAAA TAAATATTAT ATACACAGTT CAACTGTTT TATGTGTAAA GGTAGTAGGT  
TTTACAGTA AGGAAGCACT TCTTTTTTT TTTGTTTGA ACAGAGTCTC GCTCTGTCTC CCAGCTGGA GTACAGTGGT  
GCTATCTCG CTACTGCAA TCTCTGCCTC CTGGATTCAA GTGATTCTCC TGCTCAGCC TCCGAGTAG CTGGGACAAC  
AGGTGTGTGC CATTACACCT GGCTAATTT TGTATTTTA GCAGAGATGC GGTTCACCA TGTGGCCAG GCTGATCTCG  
AACTCCTGAC CTCAGGTGTT CTGCCGCT CTGCCTCCCA ATGTGCTGGG ATTACAGGCA TGAGCCACTG CACTACCAA  
GCACTTCTAG TGATGCATT TACAAACCT TCTAGAATA TTTAAAAATT CTAAGAGAAG AGTAAATTGA GCCTTCCCAA  
CTAATACTAG GAGGTTATAA CTTTATACC AAAACTGGAC AATGCTTGCA CAAAAGAAGG AAGCCAATGA GGCCACCTAG  
AAGGAAGACT GGGCATTGGG CCCAGTGAGT CCTGGAACC TCATCTGTGC CAGCCACCC GGCATGGCT GTATAGTGG  
ATGAGGGTGA CTGTCCACA GACAATAGCC ATCTAGCTGT GATAAAGGAG TCAAGGTAGT CAGCTGCATC TCTTTCACCT  
GTTTGCCAAT GTTACACAGG TTGAAAAGCT AAGGTTTATG TAAAGCAAGC ATCAAAGATG ATGAAATGAT CAACCTGACA  
ATGAGTACTA TGCTGCATTG TCCAGAAAGG AACTGTGGAA GATTTTGGG TGAATTTCAA AACAGAATT CCTCACTCTC  
TGGATGTTGG CTACTTGGC CTTGATGTT CAGAGGTGGT GCCTTGTGT TGTGAACAA TGTGATTTT GGAGAGAAAA  
CAGAGTTGAA AAACCCACAA GTCACTCCCT GGGGAGTATT ACCGGAATAC AGAGGATAAT TTCAGCAAGC CAGCAAGGCC  
TCATCTCTGC TTCTAATAGA TAGGAAGAAA GGAAGAGAGG AACAACTT TTTAAGAAG CTGAGCTTTA TCGCTTATC  
TCATAGAAAG ATGCTCCAG TCTGTCTGGC TAAAGGTAAT TGGCATGGGA AAGTCTTTAT CTGTGATTCT AACAAGTGA  
ATGTTTCCCT TCATTAAGAG AGCTTGTCT GGCTTGGGA AATGAAACAC TTTCTCCGAT ATGAGTGGG TGTAACCCCT  
GCTACTAAAT ACTCAGAAGA AATAAGGCGG TTGTGGAGCA GTCAGGAATG AGTCACTGCT CTCCCTGGAA TATTCAGAAA  
ACTGAATCAA AAGTACATTC TTCTGGGTTT TCTTAGTCTA ATAGACTAAG GGCTCTACT TTGTTAAATT TCTGGGAAAC  
AGCATAGAAT GGGAGAAAA ACTGGTCACT GTAGTCAATG AAATCTGCAA AACAAACAAA AAAGTCTGGG TATTGCTGCT  
AACTAGCTAT GTGACCTTAA GCAAGGTATT TACTCTCTCT GAATTTACAG TTCTTCTAT GTTAAATAGC ATATCTGTAA  
AATGGGAATT ATTTTCATAT CATAATGCTG TAGCTTTAAA AAATAAATA AAATGGATGA GATAATCAGA ATTAAGAGC  
CTGGGATATA TAGTTAATAT ATAGCAGCAT GTAAAGATCC TGTTAGAAAT GCTAATTTTA CAGTTAACCA TTTGGAGATG  
ATCCGCCAAA GCTGCTAGTG TAGAGGCAAC TGAGAATTTG CCTGTCTTC AGAATATGAA TAAATAACTG TCAATGATGT  
CTCAAGCCTA GAAAAACCTA TCCATCTGGA TGGGTGGGA ATTTCTAGGC TAGTATTGAG AAGCCCATTT CTGGGAAAT

AGGTCCTGGA CTGAGTGAAG GAAAAGAAAC AGTAAACCC ATGGTAAAGC AGCAAGGCTC TCTAGAGGCT CTGGAGAGGA  
TGAATTGAAT TCTAGAAGAT GAAGTAGGGA AGACGCTTTA CCTTCTGTG AAATGGATTG AAAGATTCAA AGACCTTCGG  
GAATCTCCAA TTGTATAAAT GGCACCATAG CTGTATGTTT CATGGAACAC TACTTCCCAG AGATGCCCAG TGAAAAAGA  
ATGCCACAGT CAAATAAGTT TGGAAACACT CCATTATGTG GCCACCTCCT TGAAGACTCT AATGCACATT AGCATGTATA  
ACAGTCTTGA GAAGTCCTGC AGAGCAGAAA TTGCTTCACA TCTGCTAAGC CGGCAGTTTC CCAATATACT TGATTATGGA  
TAGTTTTTTC CTTACAACAC CATTCTCTGA TATGCTTCCA ATGACATGAA ATAAATATAT ATGCATGAGG TTCTTCATTA  
GGGCATACTT TTTAATAGAA AATATTGAGA ATAATCTAAA TATAAATGCA CAGCATTAC CTTTCTGCA TAAACTATAT  
ACAGGCATAC CTGGAGATA CTATGGGTTT GGTTCCCAAC ATATCTCCAA AACCACATTG GGTTTTATGA ATGCTGCAAT  
AAAACCAGCC ACATGAATTT TTTGGTTTCC CAATGTATAT CAAAGTTACA TTTTACTAT ACCATAGTCT ATTATATATA  
CAATAGCATT ATATCTAAAA AACAACGTAA ACACCTTAAT TTAAGGCTGT GGCTGGTTTG ATTTCTACC CAGACCACTA  
AAACTTTCTT CATATCAGCA ATAAGGCTGT TTCATTCTT TACTATTTT TGTGATAGCA CTTTCTCTT CCTTCAAGAA  
TTTTCTCTT CTATTCACAA TTTGTTTAT ACAAGAGGAC TAGATTTTAG CTATCTCAG TTTAAGGTGT TTACATTGTT  
AGCTAAAAAT GCTAATGATC ATCTGAGACT TCAGCAAGTC ATAATCTTTT GCTGGTGGAA GGTCTTGCTC CAGTGTGTAT  
TGCTGCTGAC TGGGTGGCTT TGCAAAATTC TTAAAGTAAG ACAACAATCA AGTTTATGA ATCAATTGAC CCTTCTGTG  
ATAAATGATT TTTTTTTTCT CTGTAGCTG CAATGCTCTT TGATAGCATT TTACCCACAG TAGAATTTTC AAAATTGGAG  
TCAATCTTT CAAACTCTGG TGCTGTTTA TCAACTAAGT TTATGGAGTA TTAGAAATCC CTGTGTGCA TTCAACAAT  
GTTACACCA TCTTCCCAG GAGTATATTC TACCTCAAGA AACCATTTC TTTGCTCATC TATAAGAAAGC AGCTCTCAT  
CCACTAAAGT TTTATCTGA GATTGCAACA ATTCAGTTAC ATCTTCAGGC TCTACTCTA ATTCTAGTTC TCTTGCTGT  
TCTATCTAT TTGTGCTTAC TTTCTCCGT GAAGTCTTGA ACCCTTAAA GTCACCTATG AGGGTTGGAA TCAACTCTT  
ACAAACTCCT GTTGATGTTG ATATTTTGAC CTGTCCCAT GATTTCATGG TATTCTTAA TATTCTTGA ATGGTGAACG  
TTTTCAGAAG GTTTTCAGTT GGCTTTGCCC GGATCCATCA GACGAATCCC TATCTATGGA AGCTATAGAT TTATAAAATG  
TATTTCTTT TTTGTGGGG CATAGCGTCT CACCCTGTCA CCAACCTGG AATGCAGTGG CACAGTCATA ACTCACTGAA  
GACTCAAACT CCTGGGCTCA AGTGATTCTT CCACCTGGC CTCCAAAAC ACTGGATTAC AAGCTTGAGC CACTGTGTCT  
AGCCAAAAAT GTATATCATA ACTAATGAGG CTTGAAAGTC AAAGTGACTC CTTGATCCAT GGGCTACAGA ATGGACGCTG  
GGTTACCAGA CATGAAAACA ATACTCATCT CCTCATACAT CTCTTCAGA GCTCCTGGGT GAGCAGGCC ATTGTCAAAT  
GAGCAGTAGT ATCTTGAAAG AAATTTTTT TCTGACAGT AGATCTCCAG AGTGGACTTA AAATGACTGA TAACTATGC  
TGTAACAGA AGTGCTGTCA TCCAAGCTCT GTTTTCCAC TGATAGGGCA AAAGCAGAGT AGATTGGCA TAATTCTCTA  
GGGCCTTAGG ATTTTGGAA TGGCAAATG AGCATTGGCT TCAACTTTTT TTTTTTTTT TTTTTTTGAG ACAGAGTCTT  
GGTCTGTAC CCAGGCTGGA GTGCAAGTGT GCAATCTCG CCCACTGCA GCTCTGCTC CTAGGTTAC ACCATTCTCC  
TGCTCTGCC TCCTGAGTAG CTGGGACTAC AGGCACCCG CACCATGCC GGCTAATTTT TTGTATTTA GTACAGACGG  
GGTTTCGCC TGTTAGCCAG GATGGTCTCG ATCTCTGAC CTGCTGATCC ACCCGCTCG GCCTCCAAA GTGCTGGGAT  
TACAGCGTG AGCCACAGCG CCCAGCCTGT CTCTCACTTA AAGTCGCCAG CTGTGTGAG CTCTAATAAG AGAGTCTGCC  
TGCTCTTCA AGCTTTGAAG CCAGGCATCA TTCTTCTC TAGCTATGAA AATCTTAGAT AGCATCTTCT CCAATAGGA  
AGCCATTTT TATGCCCTAA AAATCTGTCG TTTGGTGTAG CCACCTTCAT CATTGATCTT ACCTAGATCC GCTGGATAAC  
TTACCACAGT GTCTACATCA TTACTTCTGC TTCACCTGC ACTTTTATGT TATGGGATG GCTCCTTCC TCTAACCTCA  
TAAACTAACC TCCACTAGCC TCACATTCTT CTTTACAGC TTCCTCGCT CTCTCAGAGT TCACAGAATT GAAGAATGTT  
GGGCCTTGA TTACACTTG GTTTAAGGGA ATGCTGTGG TGTTTGATT TTCTATCCAG AACACTAAAA CTITCTTCAT  
ATCAGCAATA AGACTGTTT ACITTTCTT TATTTTGTG TAGAGACTT TTCCTTCTC TCAAGAAAT TTCTTTCTA  
TTCAACAATT ACCGTTTGA TATGAGAGGC CTAGATTTTA GCCAATCTCA GTTTACACCA TGCTTTTTT ACTAAGCTTC  
ATCATTTTAG CTTTTTATTT AAAGTAAGAT GTGTGACCCT TCCTTTCATT TGAACACTTA CATGATGATG CTGGCTTCA  
AAGCTTGAAG GGACAGGCAG ACTCTCTTAT TAGGGGCTAA CACAGCTGGC GACTTTTAA TTGAAGCCAA TGCTCAATTT  
GCCATTAGAA GCCATTGTAG GGTAAATTA TTTGCTAAT TTTAATATTA TGGTGTCTCA GGAATAAGG AGGCCTGAGT  
AGAGGGAGGG AGATGGGGAA ACAGCCAGTC ATCAGAGCAC ACACAACATT TATCAATTA GTTTATCACC TTGAGGGCAC  
AGGTCATGAT ACTTCAAAAC AATTACAATA ATAAATATA AAATCATGTA TCGCAGATCA CCATAACAGA TATAATGATA  
ATGAAAAATG TGAAGTATTG TGAGAATTAC CAAAACGTGA CACACAGACA CAAAGTGAGC ACATGTCATT GGAAGAGTGG  
TGCTGATAGA CTTACTTCAT GCAGGGTTGC CACAATACT CAATCTGTAA AAAATTCAAT TATCTACATA GTACCATAAA  
AACAAGGTAT ACCTGTTTAT ATAATCAAGA CCAACAGAAC CCTAGAGAAA ATAGCTCACT CCCTAGCTCG GAGACATTCT  
AACCACATA CACTTACCTT TCTTTTGTG GTGTACAGAA TTCAAATCCC TGTCTCAGCA AAATTGCAAA GTATCAAATG  
TCATGTCCAT CTAATACTCA AAAGTCAAAA TGTTAAGTCT TGTAAGCCCA GAGACCACTG TATATACAAAG TGTTGCTATA  
AGCATTAGTT CTCTCCAAA GAAAATAGTC CACTTGGTAG AAACAACAAA AAAGAAAAA AAAGAAAGAA AAAACATTTT  
TTACAAGAAG ATCAGTCTC TTACTACAT AAGCAAAAAAT ATGAGATGTT CTCTTATCAT TTTTCCATCT ATCTTATAT  
CTTTGGTGT GACTTAGACA CTCATTTTCC TTTTGTACG TGACCATGTA AAAGTTCAAG TCAAGAAAAA CTGTTTTGA  
CATTGTTTT GCTGAGTGAT GGGTCCCTAA AAGAAATTTG GCTTGTCTT TGAAAAGTTC AGCATGATAT TGTGTGAATT  
TTTCATGGCT AATGATTTTT AGAACAGTTG TGATGTGTTT AGGTGTTTA AGAATATGAA GCATTCAAGT GTTTAAGTTG  
GTTGTTATAA AATGAAAGAA TATGAAGGAA AGCCTTCTTG TCTAGAACA CACTGATTCA CAAATAAGCA GCTTCTCTCA  
AAATGTTTGA ATTACAAAA TTCCAAGGCA AATATAATA ACTCCTTGTG GGTGCTATGT CTAGAAACTT AACAGCCCCA  
AAGAAAGTCC TGCAGAGGCA AAAAATATAT ATATATATAC AAATGTGGA AGCAGGGTGT TGAAGAAAGA ATAAAGACTA  
TATAAGGACA AACTGTTTAA AAGGGAGGGT ATCCTTGAAA GCTTGACACT TGACTCTTT GACGAGGCTG AGGGAAGACA  
CTCAGTTTCA TAGATTGCTG GTACGGATGT AAAATAGTGA CATCCCTATA GAGAGGAATT TGGCAATATC TAGCAAAAGT  
GCTTATGCAT TTATCTTTG ACCTAGTAAT CCCGCTTCTA GGATTAGTGG TGAAGATACA CCTCAACAAT AAAAATATAT  
ATACATTAGG TTATTAGTTA TGGTTTAATT TTTAATAGCA AAATATTTAA AACAACCTAC ATGAACAAAT AGGAGACTTA  
CTGAATAAAC TATGGTATAT CTGTACAATA AAGTGCAATT CACTTATGTT GTTAATTTGT TCCAAAAATC CAGAGCCAAA  
GAGTATTTGT TAGTCTCTT TTAGTATAAG AAAGGGGAAA TAAGATATGT GTGCATCTGT TTATTTTGT GAAAAATG  
ACAGAAAGGA TAAGTAAGAA ACTAGTAAAA CTAGTTATCT CTAGTGTTA GTAGAAATAG AATGAAGTG TAAATAGGCTT  
CTTTGAGTAT ATGTTTATAT ATAGTTTGA CTTTGAATT ATGTTTATGT TTACATAGTC AAAAATATAA ATTAATCAAC  
AGAAATAACA AAAAAGAAAG AAATCACAAG CTTTAAATTT TAATACAAAC AGAAATAATT GAATCTAACA GTATATCAAA  
GTGATAACGT AAACCTAGAA GAAAAAACA TAATCCAACA TACCAGTGG AACAATATT CTAAGTGTAT ACATTCAAGT  
GTTATAGTCT AAGGACAAGA AAAATTGCAA AAATATCTTG AACTTTAGCT TGTAGGATTT TTATTGGTAG CAATACTAAT  
GTACTAATTC TGAATTAAT GTTCGTGTAT TATAGAATTG AGTAAATGAA TAAATATGTT GATGTTATTG GGAACATAAA

TTATCATTCT GGGAGTAGAG AAATATAAAT ATGGACTTGG CAAATGAAAC AAAGACCTGC AGAGAGATAA CCATATAAAC  
TCATTATTTT AAAAATTATA AGTGTCTAG CTCTGTTACT GAAAAGGCCT AGATTCAATC TTATCTTGAT AGACAGGAGG  
GCACCCCTTT CTCAGAACAT GGTTCCTAAA TGCCATTCTC CATTAAAAGG AACAAGGTCT TCTTGGAGAA AAGACTGATT  
CTAGGTCTGG ATTAGGTAAA GTACAACGTT AGTCTGGAAT TTCTTGCTGA ATCAGAAGTA AGAAAGTGCT CAAAAACATG  
GGAACATGTC ACAAACACAC GTGAGGCAAC TTGAATCCTC ACTGGCCATA TTAGGACAA TCGAGCATCA AAAAAAAAAA  
AAATGTTGAG AATAATGGAT TCTAACACTT AAAACAAAAA ATAATCCATA GCCCAGAGAA GGGGAAGAGA GGGGGAGCTC  
TTATTTACAG ATGAATATCA AATAGCAAAG ACAGAAGAAA TGACAGAATT AGAGAAACAT CATTTTGCAA AACACCCTG  
TAATAATCAA TTCAGGCAAG TATTATTAAT GGATGTATTA CTATTGCGTA AAACCAGTTG GGAACAGGA TATTCATACA  
GTCTGAAGGT GTCACCTAA ACATAACTTA TTACAAGTGG AAAATGGTGC CTTTACAATG AAGAAATCTA GCAGAAACCA  
TCTTAATCTA GTGATCAAAC TTAGTATCAC CAATAATGGA TCATACTGAG TCATGTGTCT CCTAATATGA TGCACCAGGA  
AGGATGCAAC GTCATGAACG TTGTATTCTT TTGTATTCAA CAGACCACCC AGGGTAAAGG CAGCTTTCTC ACTTACTAAT  
CAGAATTGTT GTTTTAATT CATTTTGGAT TTTAAGATTT GTTACTTTCT TGTCAGTCA GAAATTTAT TAAGATGATT  
TTTATCTTTT ATTCAATACT TTAGCTTGA GAACCACTTA CATTGTTCTA CTCATTGTAA TGCCAAAAAT AGAAACAGC  
ATGGTTCTT TTGAAAATGT CTAACCTTAA AGTTACTTGT GTGTGCTACT CAGATTACCA TAGCTTTTTT GCCTAGTAAT  
GTAGTATCAT GTGGCAAGGC TATAAAAAATG TTTACAATCT TTTATTTAAT ATGACTCTTG AGAGTTTATT CTAAGGAAAT  
AATTGAATAG TAACAAAACA CTATTAACAC AAAGCATAGC AATTGATTG GGGCAACCA AACTGGAAC CAACCTAAAT  
GTCCATTACA GGAATCATT ATGAAGCAAA CACTAAAAATA TTTATTGTGA AGATTATGAG AACATAGAAG ACAGTTATGA  
GAGTAAATTT GAAAACCTGA ACACAAAACT TACATATACT CCAATTGTAA CTTATAAAAA ATACGTGCAT ATAAGGATAA  
AACAGTCAA ACAAAAAAAT AGTTGCGTTA GATTGCTAGA ATTAGGCTC CTTTGTCTGT CTTAATTTT TCCTTTTACA  
TTTTGATACA TTATTTAAT TTTAATTTA AAATTCAAAA GAATTGCGCA CTCATCTTTG CCACTTCAAG GAAAAAAGAA  
ATGTGTTGTA TTATCTGTT CTTAGTATAG TTTTGGCAAT TTCCTCAGT GTAAAAAGAG AATACTATTA ATAATTTTCA  
TATCTATAAG ACAATATAAA ATTAAGAAT CTAGCCAGT AACTGGTACA TGGAACGTAA TTAATAAATC ATTATGGACT  
TTTTTTCTCA CACCCAAGTA GGGAGGAATC AGTGTGCCCC TAGAGGCCCA GTGTAGAGGT GGCAGCACA ATCCCTAGGG  
GAGAAGATCT TGGTGATGAT AATTCTGAG CAGACAGTTA GCTGAGAATT CAAGAGCAGA AAAGTAAGAA AGAAACAAC  
TCTGTCAAC ACCTTTCCAC CCACGTTTCC CTGTTCTGTT GTACTCTGCT TACCCTTCA TGGATGGAGG CAGAGGAAAG  
AGAACCAAGT TTGCTCTTAG TCATTCAC TAATTGTTAA TGTGCTTCC ATCTTTCTA TCAGTTCAAA TGAAGATGA  
GACCTGAATT TAAATCCCCG TTCTGTCAGT TATAATGTGA CCCTAGACAA AACACATTCT CTGAACCTCA GAGAACATTC  
TTCATTGTGA GAATGGGAAG ATTAATCTAT ATTCCACTG GATGGCAAGT CTTTATAAA CTTTATAACC TAAACATGTG  
TGAGTTGCTA GTATCATTAT GTTGGTAAAG TTATCTGAG ATATGATAAC AGAAGTGTG TGTCTAACTC CACTAGCATG  
GTTCAAGTTT AGAGAGTGTG GAATTAAGAG GCTTATCTT CAAATATGAC TTAATCCGA TTTTCTCAT CCACTTTCTC  
CCACAAACA ACCTCAGGA AATGACAAAC TTATCATGCT TAAACATCAG TTTTGTGTTAG TCTTTGACAT CCACATGGT  
AAATCATACA TTGAAAAC GCTTATATT GTGTGCTA TGTCTAAAT GAAAAGACTT ATTGAAGAA AGAAGATAC  
ACATTTTCA GCAAACTG CACGTTTTGC AGAATTTCC CAGGCACCAG TCTCCAGGAA TTTATTGGCT ACTAACAATA  
CTAAGATATG GATGAATGAG GAAATCAAAA TGGAGATCTT GCAAGTTTGT TGAGAATGGG TGAATGGTCC AAATGAAGAG  
ATAAGTTGTG AAATATTAGT ACAAGTAAAA ATTATTACA ATGAAAGACA TTTTGTCAAT AGCTATGAGA ATTTACCAT  
TGACCCAGAA ATTCCATTTC TTTCTTCAGA AATACCCAG TAGGTATACA TATAAAAAAT TATTCATTAC AGTATCGTTT  
TTCATAGGAA AAAGTTTAA AAATCAGAAG CTATCTAAC TATGGTATAT CTAGGTCTA GAAATCAAT GACTAAAAAT  
GTTAATATAA GCATATGTTT TTAATTAAC TTGGCTTGGG TCTTCAGCAA AATTGGCTT TTAACATTGC ATCCAGAGT  
TAGACTTACC CACTCAGTCA CTTATCATGC AGGAGCAGAC TCCTAATACC ACATATCATA GAGCAGAGTA GGACACAGGT  
TCTCTGCAGG CAGGCAAATC CCAAGAGAA GGGAGGAAAG GGCTGAGACA CTGCATGGT AATTTCTTCT GAACTCTGCA  
ATGTACGGAG GTGGACAGTG TCCACAAAGA TTGCTCCCT GGACCCACCA TCATAATAAC ACAACGGCTT TGTTTTGTTT  
TTGTTTTTGT TTTTGCAC GGAGTTTTGC TCTGTTGTC CAGGCTGGAG TGCAATGGTG TGATCTCGAC TCACCACAAC  
CTCCACTTC TGGTTCAAG TGATTCTCT CCTCAGCCT CTTGATGGA TGGGATTACA GGCATGCACC ACCATGCCCA  
GCTAATTTT TATTTTAGT AGAGACGAGG TTTCTCCAG TTGGCCAGGC TGGTCTCAA CTCTTAACCT CAGGTGATCC  
ACCCGCTTG GCCTCCCAA GTGCTGCGAT TACAGGTGTG AGCCACCGCG CCCAGCCAC AATGGCCTT TGTTTACATC  
TCTAGTGCAG CACTCATTT ATGTTCTTTC AAGAAGATA CATATTTCT CTTTTATT TATACAGCAA TTAGCAGAT  
GCCTGGCATA AGGAAATGA TCATTAAGAG CTGGGTGAAA AACCTAATA AGCTACTGAG GATAGGAACT GCAGACCAGC  
ATGGAAGAA AACTATGAGC CAGATATTGA CATCATCTG AAAGGCAGAA GATTAGTAT AGGCAAGAAG TATGCTTTG  
GAATAGAA AATCTGGATT ATGATAAGAA AAGAATCAT TTTGCTTAT CTACCTACT CACTTCTAG TCCACATGT  
TCTGAGGCT TTTGTCTCT ACTTTCTTT CTGTTTACT CACTCTTCT GTTCTTTA TTTGATCAT CTTATTGAGC  
TGACATCAAG TTAACAGACC TTTTATTTG TCCAACTGC TGTTAAATGC ATCCAGTGAA TTTTAACTT TATATAGTAT  
ATCTTTTAGT CTAGAATTT CCACATGAGT TTTTAAAGT TCCATTTCTC TGCTGAGATC TCCTATTTGT TCATTATTA  
TGACCATATT TTTCTCTACA TTATTGAGCA TAATTATAAC AGCTCTCTA AAATCTTGT CTGCACATTC TAACACCTGA  
ATTATCTGG GGTCACTCT GTTTACATTG CTTATTACA AAAACAGTAT AAGTCACATT GCCTTGTTTC TTAATATGCA  
AAATGATTTT TGATTGCAGA CTAGACATTT TGAATTAAC ATTATAGAGA TTCTGGATT TCGAGAGAT ATTGACTGT  
TTTTTCCATC AGGCAGGTAA CTTGACTGGA CTCAAATCC AAACCTAGG TCCTCTGTA TGGCAACTG CAGTAATCTT  
TGTTTAGTTC TTTAAGACTT ATTGGCCAGG CACGGGGGCT CATGCTGCA ATCCAGCAC TGTGGGAGGC CAAGGTGGGA  
GGATCACCTG AGGTCAGGAG TTCGAGACCA GCCTGGCCCA CATGGTGAAC CCCTGCTCT ACTAAAAATA CAAAAATTAG  
CCGGGTGTGG TGGTGGGCG CTGTAGTCCC AGCTACTCAG AAGGCTAAGG CAGAAGAATC ACTTGAACCT GGAAGGCAGA  
GGTTCAGTG AGCCGAGATT GTGCCACTAT ACTCCAGCCT GGGTGACAAA AGCGAGACTC CCTCTCAAAA AAAAATTAT  
TGGCACTGCT TGGCATCTGC TATGAATACA TGAAGTTTAT GGGTCAGTA TAGATCTGGG CACGTTATAC ACAGAATTTG  
GGTCTCCCTT TCTCTGATT TCTCTTTT TGGATTTCT TTCTACTTT CCAGCAGCTG TGGTGGCTT AAACCTGGT  
CTCTGTTCT TTACGGCAGT AAGATTTGGG AACTTTTAGG TTTTACTGCT CTCTCAGACA AAATAAAAAA TAATTTTCT  
CTTGATGCTA CTCTTTCTT CCAGATGTAG ACACCTCTT AATTTCCAGT TGCTTTTAT TGCTCTCCAG AGTCTAAAGA  
TTATCATGTT TTTCTGTGGG AGAGTTGGTC TGATAAAAA TACTCCCCA AAACCTGGAAG CTGGAAGCTT GTAATTATGA  
ATAGACTTTG AGTAGATTCT TCTTTGGAA AAGGATTTA ACTACTCCCT ATGACTTCT TATTTCTCTG TTTTCTCAT  
CCGTAATCTT TTTATTTTCA TACTTCTAA GTCAGACAAT TTTCTACTT GAAGATTCTG TGAAGTCTAT CAAATGACCC  
CCATATTACT AAATACAATA TCCCAACTG CATTTATAAA AAGAAAATT ACTGTTTATT AGTAAACAAT GTTGTAAGT  
AGTAAAAAT TGCTGGGCTT TGGAGCCAGA TAATCAAGT TAGAATCCA GATTCTAAT TACTAGCTGG TGTATTAGTC

CTTTCTCATG CTGCTAATAA AGACATACCC CAGACTGGGA GACTGGGTAA TTTATGAAGA AAAGAGGTTT AATTGACTCA  
CAGTTCAGCA TGGCTGGGGA GGCCTTAGGA AACTTACAGT CATGGTGGCA GCAAGGAGAA GTTCCAAGCA AAGAGGGAAA  
AGCCCCCTAT AAAACCATCT GATCTATGA GAACTCACTC ACTATCACGA GAACAGCATG AGGGTAACTG CCCTCACGTT  
TAATTACCTT CCACCAGTTC CCCCCATGA CACATGGGGA TTATGAAAGC TATAATTCAA GATGAGATTT GGGTGGAGAA  
ATAGCCAAAAC CAATAATTC CACCCCTGGC CCCTCTCAA TCTCATGTCC TCACATTTCA AAATCAATC ATGCCCTCCC  
AACTGTCCCC CAAGGTCTTA ACTCATTTCA GCATTAGTC AAAATCCAA GTTCAAAGTC TCATCTAGA CAAGGCAAGT  
CCCTTCTGCC TATGAGCCTA TAAAATCAAA AGCATGTTAG TTACTTCCTA GATACAGTGG GGGTACAGGC GTTGGGTAAA  
TACACTGATT CCAAATGGGA GAAATTGCCA AAACAAAAGA GTTACAGACC CCATGCAAGT CCAAAACCCA ATAGGCGAGT  
CATTAAACATT AAAGTTCCAA AATGATCTCC TTGACTTCA TGCTCACAT CCAGGTCACA CTGATGCAAG AGGTGGGCTT  
CCAATGGCCT TGGGCAGCTC TGCCCCGTG GCTTTCAGG GTATAGCCTG CTTCCTGTTT GCTTTTTTAC AGGCTGACAT  
TGAGTGTCTG TGGCTTTTCC ATGAGTATGG TGCAAGCTGT TGGTGGATT ACCATTCTGG GGTCTGGGCC AGGTGCAGTG  
GCTCATGCCT GTAATCCAG CACTTGGGA GGCTGAGTGT GGGGATCACA AGGTCAGGAG ATCGAGACCA TCCTGGCTAA  
CACGGTAAAA CCCAGTCTCT GCTTAAAAA TACAAAAAAT TAGCCAGGCG TGGTGGTGGG TGCCTGTAGT CCCAGATACT  
TGGGAGGCTG AGGCAGGAGA ATGGCGTGAA CCCAGGAGGT GGAGCTTGCA GCGAGCTGAG ATTGTGCCAC TGCCTCCAG  
CCTGGGCGAC AGAGCAAGAC TCCATCAAAA AAAAAACAA AAAAAACATT CTGGGGTCTG GAGAATGGTA GCCCTTACAG  
CACCACCAGG CAGTGCCCCA GTGGGGACTC TGTGTGGGGG CTCTGACCCC ACATTTCCCT TCTGCACGGC CCTAGTAGAG  
GTTCTCCATG AGGGTTCTAC CCCTGCAGCA AACTTCTGCC TGGACATCCA GGCATTTECA TACATCCTCG GAAATCTAAG  
CCGCGGAGGT TCCCAAACCT CAATTCTTGA CTCCTGTGCA CCCACAGGCT CAATACCACA TGTAAGCCAC CAATGCTTGG  
TCAGGGCTTG AACCTCTGA AGCAATGGCC TGAGCTGTAC GTTGACACCT TTTAGCCTAG ACATCTAGGA CACAGGGCAC  
CATGACCCGA AGCTTCATAA AGTGGGAGGG CTTGGGACT AGCTGAGGAA ACCATTTTTC CATCCTAGGC CTCCAGGCC  
GTGATGGGAA GGGCAGCCAT GAAGGTGCCT GACATGCCCT GGAGACGTTT TCCCCATTGT CTGGTAACT AACATTCAGC  
TCCGTGTGCA GCACCAACTT ACTTATGCAA ATTTCTGTCA CTGGTTTGAA TTTCTCCCA GAAAACAGGA TTTTCTTTT  
CTATTGCATC ATCATGCTGC AAATTTTCAA ACTTTTATGC TATGCTTCTT GTTGAAGACT TTGCGGCTTA GAAATTTCTT  
CCCCAGATA CCAAAAATTA TCTCTCAA GTTCAAAGT CCACAGATAT CTAGGGGACA AAATGTTGCC AGTCTCTTG  
CATAGCAAGA GTGACCTTTA CTCACGTTCC CAACAAGTTT CTCTCATCCA TATGAGACCA TCTCAGCTTG GACTTAGTTG  
TCCATGTTAC TATCAACATT TTGGTCAAAG CCATTCAACA AGTCTCTATG AAGTTTCAA CTTCCCATG TTTCTGTG  
TTCTAATAGC CCTCCAAAT TTTCCAACT CTGTCTGTTA CCCAGTTCTA AAGTCACTTC TACATTTTGG GGTATCTTTA  
CAGCAGTGGC ACTCCCCATG GTACTAATTT ACTGTATTAG TCTGTTCTCA TGCTGCTAAT AAAGACTTAC TCGAGACTGG  
GTAATTTATA AAGAACAGAG GTTCAACTGG CTCACAGTTC AGCATGGCTG GGAGGCCCTCA GGAACCTTAC AAACATGGTG  
GCAGCAAAGA GAAGTTCCAA GCAAAGAGGG AAAAGCCCCT TATAAAACCA TCAGATCTTG TGAGAATTCA CTATCATGAA  
AATAGCATGA GGGTAACTGC CCCCAGTATT AATTTACCTC CCACAGGTC CCTCCCATG CAGGTGGGGA TTATGGGAAC  
TACAATTCAA GATGAGATT GGGTGGGGAC ACAGCCATAC CATGCCAGCT AGAGAGCCTT AAGAAAGTCA CCTAATCTCC  
ACAAATAAAA GGTTCCTAT TTGTCAACA AAAATAATGA CCCCCCTTT ATGGGATTC TGTGAGGACA AATGATAACT  
AACATAGCCT TGCATAGTGT CTGGCAGAAA ATAGTACTC AAAAAATAAT AGAAACAACA TTTAAAAAAT GTAGACTTTA  
TTTTTTAGAG TTTTATGTAC AAAGCAAAAT TGAGCAGAAT GTACAGAGAG TTTCCGTATA GCACTCCCTA CCCCCAAGCA  
CAGATAGCCT CCCCCAGTAT CAGCATCCCG CACGAGATG GTACATTTAT TATACTGAT GAATCTATAT TGACGTGTCA  
TTTTCATCCA AAATCCATAG TTTATATTAG GGATGCCTG TGTGTTGTA CTTCTATGG GTTTGACAA ATCTAGTAATG  
ACATGTATT ACCATTACAG TATCATAAAG AATAGTTTCA CTGTCTTAAA AATCTTTGAT CTCTCTCTA TTCATCACTC  
CCTCCCCATT AATCCCTGAC AACTACTGCT AATTTCTCTG TCTCCATTGT TTTGTCTTTT CCTGAATGTC ATATAGTTTA  
AATATACAGT ATGTAGGATT TTCAAACCTG TTATTTTAC TTAGTAATAT GCATTTGATG TTCTTCCATA TCTTTTCAA  
GCTTCATAGT TCAATATTTA TAGAATTGAA TAATATTCCA TTGTCTGGAT GTACTACAGT TTATGTATT ATTCACTAT  
CAAAGAACAC CTGGTTGCT TCCAAGTTT AACAATCATG AGTAAAGCTG CTATAACAT CTATGTACAT GTTTTTTGT  
GAATTGAACA TTTTACGCTT TTTAGCTCC ATTCTAGGA GTGCAGTTG TGGATTGTAT GATAAGGTA GTTTTAGTGT  
TGTAAGAAAC TGCCACGCTC TTCTAACTG GTTCTACTGT TTGCACTCT CACCAGCAAT CAAAGAGTTC CTGTGTCTC  
ACATACTCAC CAGCATTTGG TGTCGTCAAT GTTTTGAGCA ATAGCATTTT GATCTAACTT TTCTAGGTA TTCTTTTGA  
AGGAAATAAT ATGACAGATA ATAGAGAAAG GATATACGAG GACAGTTCTG TCCTTTATTT ATAGTCCATC ATTTAATGAA  
GGACTCTGTC CACACTTGGT ATTTTAACT CTGATCTCTC TCTCCATGA ACTCTGACAA TCTCTAAAT CCCTGTGCT  
GGCACACATG GTTGTGTATC AGGCCCCCTG TGGTCTGTCT GAAGCATGGC TTTTTTTTTT TTTTTTTTTT TTTTTTGGAG  
ACGGAGTCTC GCTCTGTCG CAGGCTGGA GTGCACTCGG GCGACTCTCG CTCAGTGCAA GCTCGCCTC CCGGTTTAC  
GCCATTCTCC TGCTCAGCC TCCGAGTAG CTGGGACTAG AGGCGCCCGC CACCAGCCT GGTAATTTT TTGATTTT  
AGTAGAGGCG GGGTTTCACT GTGTAGCCA GGATGGTCTC GATCTCTGA CTTGTGATC CGCCCGCTC TGCTCCCAA  
AGTGCTGGGA TTACAGGCGT GAGCCACCGC GCGCGCCTT TTTTTTTTTT TTTTTTTTTT TTTGAGATGG AGTCTGTCAC  
TCTGTACCC AGGCTGGTGC AGTGATGCAA TCTTGGCTCA CTACAACCTC CATCTTTCAG GTTCAAGTGA TTCTGCCACC  
TCAGCCTCCC AAGTACCTGG GATTACAGGT GCGCGCCACC ACACCCAGCT ATTTTTTTGT ATTTTATGA GAGACGTAGT  
TTCCACATGT TGGCAGGCT GGTCTCATC CTGACCTGA GTGATCCACC TGCTTGGCC TCCCAAAGTG CTGGGATTAC  
AGGCATGGGT CATCACATGT GGCCTGAAGC ATGACTGTG CTITAATCAT ATGAAATAGT GCTCTGTATT GTTATCTATT  
TGAAATGCCA CACCTCTGA GCTAAATTGC AAGCTTTTAT GGAGCAGAAA CCATATTTAT ATATATTAGC ATGATACCAT  
GACACATATC AAAAGCTGTT ATATATTGTT ACGTGAATTG ATTCTTTCTC AGTTAAGAGG ACCTCTGTAG TAGCACTTTC  
ATACCGTTAA TTTTTCATTT TGTGCCCAGC CCTACTCTG TGAAAAATGA AATGAATCCT GTTATCATTT CCTCCCAGG  
CCTTTTCTCC TTGTGGACAA TGTGTGGCTC AAGAGAAAAA TCAGTCAGTA AATTGTGTTA GTGCACAAAC TCTTTATCAC  
CTCTCACTGT TCTCAAGTGA GATAGAACAG AACATCCATC CAGTGTCTTA CAAATTGTCT GGTATATAGT AGGCACCAA  
TAAATGTTTT TTGAATAAAT GCATACATGA ATCTATTCC TATATATAGT ATGGTAGACA GATCATGTAT ACCCAAAGAT  
GCCCAAATGC TGATCCCCAG AACTTGTGAA TATGTTACAT TTCATGTCAA AAGGGACTTT GCTAATGTGA TTAAGGATT  
AGACCCTGG ATTGTAAGAT TATCCCGGAT TAACCAGGGC CAATCTAATC ACATGAGACC TTAAGAAAGC AGAAACATT  
TCCAGCTGG GTTAGAGAGA GATGAGACAG AGTAAAAAGG AAAGAGATTG AGGGCATGAA AATGACTCTA CCCACTGTTG  
CTGGCTTTGA AGATAGAGGA ACTAGGCCAC AAAACAAGGA GTATGAGTGG CCTTAAGAAA TAGGAAAAAG CCCTCATCTG  
ACAGCCAGCT AGAAAGCAGT CCTCTGACCA CAAGAAATTG GATTCTGCCA ACCACTCAA TGAGCAAGGA AATGGATTCT  
CCCCTAGAAC CTCCAGAAAG GAACACAGCT CTGTAATGCC TTGATTTTAG CCAGGTGAGA CTGTTTCAG ACTTTTGACC  
TATGGAAATA TAAGATAATA AAGTTTTATT GTATGCTGCT AAATTTGCGG TAGTTTATTA CTGAAGCAAT GGAAAGCCAA



TACAGACAGA ATATACAGAG AGAAAGAGAA TGAGTTCCTT CCTGATAATT TGTAATATT TGGGTCTTCA CTGGACAAGC  
TTCACAGAGG ATTCAGTGGT TCCCTAGCAA ACCAGCATGT CCACTCCTGC AGCCTCCCTT TCTTAGGCCC AGCATATGTC  
AGCTGTGTGC ATAGAAAAAT CAAAGCAGGA CCCTGAGTAG TTGGAAGAA AAGATGGTTG GAAATGGGTT GCACCTCAAG  
TGAGGAAACA AGAGGTAGGA GACCGGCATC TCTTCTCAT ATGTCCCAGG CTGACTCTTG TGAGTTGTTT TCCCTTGGAG  
GTCACGTCTC TGAGAATTAT GTTGGTAGAT ATTTGCTCTT CTGGCCAGAA AGACCTAGTT TGGAGTCTGG AGTCATGAAG  
GTGACATACA TGAGCTAGT GACATAAGTG TAACATAGTAA AATAGTGAG TAATGGCCCT GAAATCTAT TGAATGCCA  
AAGTGCTGAC CAGGAACAAG CATGCTCTAG CTTATCTCAC AAGGAACTTG ACAATTTTCT TCAAAAATCC TAGTAGCTAA  
GATTTCTTAG TAACAAAGCC ACTAAGGCAC AATTATGATT AACTTGACCC TTAGGTGACT TTAAAGGACT ATTCTATAAA  
ATATTACAAC TAATAGTGA TCCAAGCCAG CACACTCTGC TATATAAGAT TAATTGACAG TGTCCACACT GGTAATAATA  
GTTGTTTCAT AAATACATTA GAATTCATTT GCACCTTCTA CACAGCCCCA AGTCCAGAAC TTCCCCAGA ATAGGTCTAT  
GTTTGCAAT TGTACTCC ATACAGAGAT TTGAGTTTCA TTGGCAATTT AGTGTGCTT ATATGTGACC AGTTAGTCTG  
TTTTACTTAT CTATGCCTTA AACATTACTA TACTTACTAA TTCCAAGATG CTGGTCTCA ACTTGACAAA AATACCCCAA  
GTTGGGAAAT CTTATGTGA ATATGTAGAT AGTCACAATT GCTGGTTGAT GATGATCTGT CTTTTCTGT ATTTGAGAAA  
ATGGAGATAA AATGGACCAA TCCAAATAAT GGATTAACA TGGGAATAGG TGAGAGAGAG AGAGGAATAC ATGGTGCTC  
TCAGTGTCTG GCTTAGGCGAG TAAACACTTT CGTTAATAAA GACGGAAAAT AAAAAAGGAA TAATTGGTGT CTAGGGGAAA  
ATAATGAGCT CAAGTTTAA CACTCTGAGT TCCCGGATGT GAGACATCCA GGCGCATTTA TCCAAGAGGC AGTTGGAAGC  
AACGTTCCGG AGCTTAGGAG AGAGGCATGA CCAAAAGCTG GTGGGACTGT GAAAAGGTAT GGCCATTCTG GAAAACGTT  
TGGCAGTTTC TTAGAAAATT AAACATGTAC TAACAACCCA GCAATTTGAT TCTTGAGCAT TTGTCCCAA TAAATGAAAA  
AAAAAAAAG CATTTTTTTT ACACAAAAAC ATATACATGA AAGTTTCATG AAGTGTATT CATAAAAAAC TGAAAAAAAC  
TGAGATGTCT TTATTGAGTG AATGCTTAGG CAAACGGTGG TCTATCCATA CAATGGAATT ATGCTTAGCA ATAAAGAGAA  
AAGAACTATT GATACATGCA ATAACACAGA TGAATCTCAA AGGAATTAAT GCTGAGTGGG AAAAAAGCA CATCTCAAAA  
TGGTATATAC TGTACTATT TATTTACTTA ACATTTIAAA AATAGCAAAA TCATAGAGAT GGAGAACAGA TTAATGGGTA  
CTGTGTTTG GGTAGGGGAG TGAGAAAAGG GTAAGGTGA AATATAAAGG GGTAGCACA AAGAGCCTTG TGGTTGAAGG  
ATTCTATGTC TTGGTTGTAG TCGTGATTGC AGGAATCTAC ATGTGATAAA ATTGTATGGG TCTACATACG CATACACACA  
AGAGCATATA AAACCTGGTGA CATGTGAAGA AGCTCCGCAC ATTTGCCCAA CATCAGTATC CTAGTTTCAA TAGTCAGTA  
CAGTTATACA AAACATTGTC ATTGAGGGAA ACTGGGTAAA GGGAAACACAG GACATTTGGC ATATATTTT GCAATTTCT  
GTGAATCCGT AATTATTTAA AAATAACAGA TATACTACAT ATCAAAAATT TAATGTCATA AAGTTGATGA GTTTACCTAG  
TGGATAGCTT TGTTAATATC TGCTATAAGA CTAATGAAAA TGACAGTTAT GCAAGTATAA GCTCAGAGAA CTTTCTCCC  
CCTTCGTAAG TGAATGAGC AAAAGAAATG AAACAGGAAA GGCAAGCAGT ACTGAAAAA GGGAAAGGCT CTTCCCATTA  
TAACTATATC TGCGACTTCA ACAGCTATTC ATCCAGAAA ACAGCTCTT GCGCTAAGAG GAAACTTTTG ATAACAATAT  
GTTTTCATC TCCAAGAGAG AAAATGGATA GATTAATTTT TAAGAAAAAA AAAAAAACCT CACCAATTTT AGAGTGTGGC  
TTGACCTTT AATCCAGCT ACCTACAAGG CTGAGGTGAG AGGCTTACTT GAGCCAGGA GTTCAAGGCT GCAATGAGCT  
ATGATTGATT GTGCTATCGC ACTCCAACCT GGAGTACTAA GCTAAGAGCT AAGAACACAG CTGAGAGCGG AGAAGAAACA  
AACAAATCTG ACCAATAACC CCCACTCCCC TCATTTTACT GGAGTGAGCT GAGACTGCTG GCAACATGG CTTTGACCT  
AGCCTGAAC TTAGCAAAAAG TCATCAGATA TTTTCCACC AATCAACAGA CAGAAGTGGG GAGAAAACAA TCGTAGTTCA  
TAACTACAAC ATGACAGATA ACGAAGGCCA TGGTAGGGA TGAAGACAT TGTGATATAT CAAAGGCAGG CTCATTTAA  
ACTCAACCA AATTCACAAAC AAAATATATA ATTGAATATG TATTAATGCC AAAGGAGCTT GAGTGAGCTT TAGCACAAC  
CCGCCCCCTC AGCCCCACC CAAAAAATC ACTCTGTCT CTCCCCATTC TTTGATAGGC ATACTTGTG TTTTCTCACA  
GCCAAGGTAC AGAGGGGACT TAGAGGAACT AGAATCTAA TACACTGCTA GCAGGAATGT AAAATGAAGC ATCTACTTCA  
GAAAACCAAT TTATCAGTTT CTAGAAAGTT AAACATAGAC CCACCATGCA GCCCAGCCAC TCTACTCTA AGTATTTACA  
CAAGAGAAAT GAAAACGTGT CCCCACACAG TTGTATTTAA AGGTGATGGT TAGCCTTGTG TGTCAACTTG GCTAGGCTAT  
AATACCCAGT TACTGAATCA AATAGTAATC TAGGTGCATC TGTGAAGGTA TTTGTAGAT GTGGTTAACA GCTACAATCT  
GTTGACTTCA AGTAAAGGAG ATTGCTCTG ATAGTATGGG TGGGCTTCTAT CCAATCTTCA GAAGGCTTGA AGAGCAAAA  
GTAAGGTTTC CCGGAGAGAA AGAAATCTG CCTCAAGACT GCAGCTCAA CTCTGCCTG AGTTTCCAGT AGCCAGCCA  
GCCTAAAGAT TTGCTAGGCA TTATAATCAC ATCAGCTAAT TTCTTAAAAA AAACCTCTT ATATATATTG ATACAATGAA  
TGGTTATAGC AGCCTTATTT GTAATAGCCA CAACTGGAA ACAACCTAAA TGCTCTCAA TAAGTGAATA CATAACAAA  
TTGTGGTATA TCCACAATTT TTACGCAGCA GTAAAAAGGA ATAAATGGTT GAATAAGGAA TAAACACATA ACAAGGATGA  
ACCTTAAAAA CGTAAGGCTG AATGGAAAAA GTCAGACAAA ACTAATACAT ACTGAATAAT TCCATTTATA TTGAAGTTCT  
AGAAAATGAG GACTAACCTA TAGTAACAAA AAGCAGAAAA ATTTTGCCCA CTGGTGATGG AGGGGGCGCA GGTATTGTAG  
AGTATCTGAG AAAGGACAAC TGGATAAAG GGGGCACAAG AAACTTTTG AGGGTGATTG ATATGTTTAT TATCTGTGG  
CATGGTTTCA TAGGTGCATA CATATGTCAA AACATCAAGT TATACACTTT TAAATGTTT AGTTTACTGT ATATCTATTA  
TACTTCAGTA GAGAGGAAGG AAGAAAGTGG GCAGGGTGGG GGAGAGGAAA GGAAACGAGG GAGGAAAGGC  
CCTAATAGGA AGGATTTTGG AGTTTATGATT TAAAAATGAT AAAGGATGTT TGACACTCTA GGCATATGAC GAATATAGGA  
TTATGAGTCC ACAAACCA CCAGGAAGTC ATGTATGTTT ATACTTTTAA GTGAAGGATC AGTGGATTAT CAACCTCCTA  
ATGCTTTGCC TCTCTATGAC TGGCTGCTGT CTTCTCATC CCAATCTCC TTCCAAGGCC CTTGCTTAA ATGTAAGCCT  
TCTTCTCTCC TTTCAACACA TCTGCAATC CGTGACAAA TAAGTTTTC TTAACACAGA TGTACAGCAT ATATTGTGA  
CAATTAATAA TTTTGGCCA GGTGTGATGA CTCATGCCTG TAATCCAGC AATTTGGGAG GCCGAGATGT GTGGATTACC  
TGAGGTCAGG AGTTGAGAG CAGCCTGGCC AACATGGTGA AACCTGTCT CTAATAAAA TACAAAAATT AGCTGAGTGT  
AGTGTGGCAG GTACCTGTAA TCCCAGCTAC TCAGGAAGCT GAGGCAGGAG AATCGCTTGA ACCTGGGAGG TGGAGGTTGC  
TGTGAGCAGA GTACAGACTA TTGCATTCTA GGCTAGGAGA CAGAGTGAGA CTCGGTCCCC AAAAAAAAC ACATTTTTT  
TTAATGTTT CTCTTGCT GTAGGAAAAA GGCTGTGACT CTTAGCCTG GGCATCAGAG CTCTATCTAA ATGGACTTAA  
ACCTGATTTT GTGGCACTAA TTCCATTGCA GACTTGTCC CCTCACTGGC CTGTGCTCT CTGCCACTAT TTTGGAATA  
ATGCTCTCTC TCCATCTTGT TACTCAACT ATATCCAACC TCTAAGGCTG TGCTCTACA AAGCCTCCCC TGGTACTTC

AGCCACAGA GATATTTAAC TGCTCTGCAG TTCAGGACAT TCTTCTGACT CTTTAAATCA CATTTACTTA TATATGATCT  
TGTGATATTT TTTGTTGACG TGTTTACTTT AATTTTCTTC CATAACCTAT TCATTCAACA AACTCAACAA TTATTTATTA  
AATGCCAAGT TAGAAAAATA TTATTGATTT TATATAGATT ATAGATATGT TTGAAATTTT ATTTGGCAAT CTGCAAGTAG  
AAAAATAATT ATAATGTGGT ATATCTGTGA TAGAAGTATT AGTGCAGAGA CCATGGGGAA CATAATCCAG CQTGGAAGTT  
CAGGAGAGAT ACGTGAAGA AAGGACGTCA GAGCCTTTT CCTACAGGCA TGGAAAGAAC ATTAACAAAA ATTTTITTTT  
TTGAGATGGA GTCTCACTCT GTCTCCAGC CTAGACTGTG GTGGTGCGAT CTCTGCTCAC TGCAACCTCT GTCTCCCGGG  
TTCAAGTGAT TCTCTGCCT CAGCTTCCCA AGTAGCTGGG ATTACAGGTA CTGCCACAC ATGGATGATA AATATGATCA  
TATTTTCTTG TCTTTTCTT CCTCAGTTGT CTTCCTGAA GAAAGGAATG CTTTTATAG ATGACAACT CCCATTCTCA  
AGAACAAGGA TTTTGACCA ATTTAATTTA ATCAGATGTC TGGCTTTGAC CTAGAAACAC AGTCACGAAA CTGGTGATT  
AGAGACCAAT TCCCAAACAT GAGCATTCT TAGGAAACAC AGTAAAGATC TGAGAGACCC AAGAGCAGAA GGGCGAGAAA  
CCAAAAGCCA TCAGTTTGCA TAGGAAACAC CTGTGTTAGC CTAATCTTTT TATTTTATT ACTCTATTAG TCACTACAAC  
TTTTTCTGA TTGCTATGGT GATAGATGGT TTAACAAGC CTTTCATTAA GAATTGTCAC ACCATTGGTCT CAGTCAAAAA  
CACCAACATT TTTATTGGTA TTGACAATTA TGGGAATATC CAATTCCAAG AAGACAAGGA GACCTCTGAA CTTTCTAAAT  
GAAGACTCCA ATCTTCTGA TCTGATGGGA AGCAGCTTGG CAAGATTACC AACCACCACC ACAGAGAGTG GACTCTAAGC  
TAAGACTTAA AAGATAAGTA GAAATTATCC AGGTAAAGAT GTGTACAGAG AAGGAAGTAC ATCCAGGGGA AAAGAACAAT  
ACGTGCAAAA GTACGGAAAT GGTAAAAAGT AATACTACAT AGTCAAAGCC AAGCAGAGTT CAGAAGGGAT CTGGTGGTGA  
AAAATACGGC TAGAGAAAGC AGCAAGGATT GGCTTCTAAA ACCTATGTAG TATCTTGGAC CTTACCCTAA ATGTAATGAG  
AAGCTTCTAA AGAATCTTTC ATTTATTCAT TCATTGAACA AATATTGTA GGCTTTCTGA GAAGAACATC ATCTAAGTA  
GTAAGATAC AGCAGTGAAT AGGACACATA AAATCTTAGA TCTCACAGAA TTGACATTCC AGAGAGGGAA AGGTAGACAA  
TAAATACATA AACAATCAT TTAACAAGAT GATTTCAGAC AATGGTACGT ACTGTGAAAA AAATGAAACA AGGTAATGGA  
CAGCGAAAAG GCACTGGAAG GAAGCCTGCT TACCTTGGCA TGGTTAGAAA AGATCTCTCT AAGAAAGAGA CCACATGTGA  
GCTGCCACCT GAAGGATACC GAGAAGCTAG GTGTGCAAAAG ATGTGGGGAC AGAATTTTG GACTGAATAG CAAATACAAA  
TGCCCTTGGG TGCAAGCTTT GCCTGTCAA GGACCAAAAA GAAGGCCAGT GTGCCCTGCAG CATACTAAGC ACAGAGGAAA  
ACACTGTTAT ATGCTGAGAT TGAATTATA AGTAGAGCCA GATAATATAG TCTCTTATAG GTCATAATA GGCAACGAGA  
TTTTATTCCA AGAGGATTTA AAAATCACTG GAGGTTTGGC ATAGGGTGA GAGGTGTGAT TTGTATTTTT AAAAGATAAT  
TCTGGAGAAT TAACTATAAT GAGGTAGGAG TAACTAAGT TAGGGGCTAT TTCAGTGGCT CAGACAAGAG ATAATGGTAG  
CTTAGACTAG GATAGTAGTC GTAGAAATAA AAAAAAGTGG CACTCTACTT TGGGGGTAGA GTCTATAATA GGTTTGGTTT  
ATGGATCATA TATGAGAGTA AAAAAAGAA AATAAATTAA TAATGGTTCC TAGGTTTGTG CTTGAGCAAC TGAATAAATG  
GGTGCTGTGA ATTGAGATAA AGGAGATTGA GAATCACAGG CTTGTGTTTG CAAATTAAT TTGAGAGGCT TATTAGACAT  
CCCAGTGGAG ATTTCAAGTG AGTGGAGCCC ATTGAAAGGT AAGGGACAGG GTCAGGTGTG GTAGGTCAAG CTTGTGATCC  
CAGGACTTTG GAAGGCCAAG GCAGACAGAT CAGTTGAGCT CAGGAGTTTG AGACCAGCT GGGCAGCATG GGAAACCTC  
GTCTCTACAA AATATGCAAA ATATTACCTG GGCATGGTGG CATATGACTG TGGTCCAAGC CACTTGGGGG GCTGAGATGG  
GAGGATCACT TGAGTACAGG AGGCGGAGGT TGCAGTGAGC CAAGATCTCG CCACTGCAAA CCAGCTTAGG TGACAGAGTG  
AGAACCTGTC TCAATAAATA AATAAGAAAC GTAAGGAAA AGGAAATTAA TCTGATCATT GGCAATGCA TAGTATTTAA  
AGCCAGGGGA GTAGATGAGA TACTCAAAGT AGGTGAAGAT AAGGAGGCAA TGAAGGCCTA GACTCTGGT GTACATTTAG  
ATGGTTATAA GAGGAATAGA AACTGGCAAA ATAAGTAACA CTGAGCACC AATGAGGTGG AGAGGAAAGC CAGGAGATGA  
AGCATCATAG AAGGCAAGAG AAGAAGGGTG TCAAAGAGGC GAGGCAGTCA TCAACTTCTG GGCAGTCAAA TAATATAAGG  
ACAGAAAAGT GACCATTGGA TTTGGAATA TGATGAGCAC TTTGAGTGA GTGTTGAGAC AGAAGAACA TTAGAGTAGA  
TTGAGGAGAT AACGAGAAAT GAGAAAATGT AACCTGCAAG CACAGACAAT TCTTGAGAGA CTTTCTGTG AAAGGAAACA  
GACACAGAGT CTTAGCATGT CTTGTCTTTC TATGGGAAAT GTAAATAGTT TGAGATCAGG GATAGTATT TATTCTGCTT  
TTTGTAACCT TACATTACCT AGCATAGAGC TAGCTAATGT GCACTTAAGT ATGTTCTCAA TTCTTATCGC CTGAATGACT  
GGATGGGTGA AAGAATGGAT GGATGGATGG ATGGATGGAT GGAAGGATGG ATGGATGGAT GGAAGACTTC TGATTGGCA  
AGAAGAGGAT ACTGGTAGCA GAAATAAAAA CAGCATGGA GAAAGAAGAG TTAGATTTTT TATCTTTTG TGTCAGTTAG  
ACAGGAAAGT AAGACATTAG AAGAGTCTT AGATAATTA TGTAATTGTI CACTTAGGAT TTTAAATGT GATCACTGAT  
ATTGGACATG TTCCTAGTGA AGCATTTTTG GTGTTTCACT GGTGAAGTT AATACTGTA AAATTATTT CCGTTCAGGA  
CAGAAAAACA GAAACTTGA AGCTCCTATT AGAAAGTTCA AGATTCTCTG GGGTCTTAG GATTTACTGT TCCAAAACCT  
CTGTCAAGAA CAAGAAAATG ACCTGTATAC TTAAGTGGT TAGGCAACAG TGGAAAGACA ATTCTCAGAG AAGATTTGTT  
TTAAGAAAGC ACTTTCCATA GGAATCAAAC AATAGCTTTC AGTGAATAAC ATGGTAAGAC ACAGGGTGT AGCTCTTCC  
TTCCAACTC ATGGCTGTTG TACCTTACCT TCGACCCCG GTTCTCTGAA ATTGTTAAAT TCATAAATTT ACCAAGGACT  
AACCAGCTC TGGGGAATTG CTGTATACT AGCAAACTTA CAATGGACAT ATTTATAAGC CATAATGATA ACTGACTAAT  
AGGAAATACC CTCAACTGAA AATGAGAGAT CATCATTTGC AAATGAGTTC CCTTGGCCAG GCAACTACTG GGGAAAATGT  
CATGCAAGCA AATTAATCT TTGAAATCCT CTTTTCCAT TTTTGTGTC TTCCTTTCC ATAGGCACCA GAAATATCAT  
GGTGCTGGA TCTATCTCT ACAGAAAAAA AAGTGATTT GATAAACTGA TTTATATTGT GTCCAAATGT GATTGTATT  
TCAAAGATAA CCTAAGGGGA GAATGCTGTC TGGCCCAACA GCAGGCTCTC GACTTCATT CAGACTCATG GGCAATGGC  
TGGGAAACAG TATGAACAG TAGGTTTCTG AGTCCCTGG AATTATCCA TTTATGTAGC CACCTCATG ACAGGAAGCC  
TCCCTACTCT TACTCCAG TTTGTTCACT CATGGCAGCA GGTGACAGAT TAAAATTTG TCAGTGACCT TTATCTAAT  
AATGTGTTAC CTTCTCTCT TAAAAAGTAC AAGGGACAAA TGCTCATGGT ATACTTTTAG GAGATTGTGG CTCTCTATTA  
ACAGTATTTA TCAACAAAC ATTTATTGAG CATTATATG TGCATCATGC TAGGGACTGG AACCTAGTAA GTGTAGCACA  
TATTATTTCA TTTAATCCTC ACAACAAACC CATGAGGTTG GTTTATGAT CCAATTTTT CAGAAGAAGA AACTGATATT  
CAGAACCAGT TAACTAAGT GTTCAAGGTC ATGCAATTT TAAGATACAG AACCAAGAGT CAAAGACATG ATTTAAACC  
AAGCTTTTT CTGCTACTCC ACATTGCTTC CTAGGTGAG ATCTGAGGCA TTCCGGGAAA AGAGAAGGT CATAAAGCCA  
AAGGAAGACA AGCTTAGGAA AAAAAAGGGA AATGCTCTAA ATAAACAGCT TTCTATTTA CCAGAAACCA CTAGTTTAAA  
AATATAATGG GAAAAATCCT ATTCATTTA ACAATGTTAA AAAAAAAGAA GATAGAAGAA ACATAGGGAT AAACCTAACA  
CATTTGTAGG ATATGTAAAG AAACATAAAG ATGTTAATAA TGGCCTAAAG AAAAAAAG TTACATGTAT GGGGAGATAG  
ACCATCTTAC TGGATTCTAA TATTTAATAG TCTAGGTGTT CCATTCTCA CCAATTAAT GTATACATTT AATACAATGT  
CAAACGAAAT ATCTTAGGAA TTGCTTACAA ATTGTCAGAT AATTACAAAG TTTACCTGGG AAATATAAGC ATATATGAAG  
AGTGAATGGG ACCCCACCAC TCCCCCAAAA AAAAAAAGG TCTGAAAAGG ACAGAAATCA AGGAGAGTCT TGCTGCCAG  
ATACAAAATT CTATTATAAA GGTGTATTGA TGAACAAT TTAATACTAG TGTAGCAATA GGCAGAAAG CAATGAACAA  
GCATAAAAA ACCAGAACCTA TACCTAATTA TGATGAAGT TTAAGGTATG ATAAACATGA CAGAATTCAA ATCAGCAGAA

ATTGGCATAG ATAGGGTTAA GACAAATAGC TAATCATTAG AGGGGAGGAA GGAAAGGAGG GAGGATAAAA TTAGGTTCTC  
GCCTTCATCT TACATTAATAA TAAATTCAG ATGTATTACA TTAAATTTT TTTAAAAAA GAAACCACAA AATACTTGAA  
GAAATATATA GTTGTTATAT AGTCTTTTGA TGGGAATTTT TTTTTTTTTC AGAGACAGGG TCTTGCTCTG TCACCTAGCC  
TAGAGTGCAA TGGCATGATC ATGGCTCACT GCAGCCTTGA ACTCCTGGGC TCAAGTGATC CTCCCAGCTC AGCCCCCAG  
GTAGCAGGAA CTACAGGCAT GCGACACCCC ATCCAACCTA TTTTTTATTT TTTGTAGAGA CAGGGGTCTT GCTTTGTTTC  
CCAGGCTTAT CTCGAACTTC TGCCTTCAAG CACCTCAGCC TCCCAAAGAG CTGGGCTGAT GGGACATTTT TTAACATAGT  
GCCACATTAC CATAAATGAA AAGCTTGTA AATACTAATT TTTAAACCTA ATATATATCA GAAATTTTAA TAAACAAAGT  
TAAAAAGCAA ACACAAAAAA TTTGTAGCAC TTATGACAAA TATATGTATA TATATGAATA CAAAAAGAGC CTTTACAAAA  
CAGTAAGAAA ACAATGAATA CTCCAATGG AGTATTCAAA ACTAACTGC TAAAAGCAAT TCAAAACAAA AAACATAAAC  
TATGCATATA TGTATGTGAA AAAGTTTAA CTTATCAAAG AAGTAACTC TCAAAGAAAT AAACATCAAA TAAGGAAATA  
GCCTTTTCCC ACAAAATAACC AAAATCTGTA AGAATACTGA GCTGCGAATG TTTTCAAAAA AAAAAAAAT CATACACCTA  
GTTCGGCATG TAATTAATAT AGATCGAAC ACTTTAAAAA TATTTATAGG CCAGGCACGG TGGCTCATGC CTATAATCCC  
AGCACTTTGG GAGGCCAAGG CGGGTGGATC ACCTGAAATC AGGCTTTGA GACCATCTG ACCAACATGG TGAACACCTG  
TCTCTACTAA AAATACAAAA ACTAGCCAGG CATGTTGGCG TATGCTGGTA ATCCTGGCTA CTCGGGAGGC TGAGGCAGGA  
GAATTGCTTG AACCAGGAG GTGGAGGTG CAGTGAGCTG ACATTGTGCC ACTGTACTCC AGCCTGGCA ACAAGAGCAA  
AACTCTGTCT CAAAAATAA TAATAAATAA AAATAAATA TTTATATACT CTGACCATC AATTTGTCCA GCATAATTAG  
GCATGTGTAC AAGGGTTTAC ACACAAGAAT GCCTATTGCA ATATTGCTTT TAATGCTAAA AAAAATTGGG GAAAAATGCTT  
TAAAAATATA GATTAAGACT GTACATTGTG GTACAGTCAT ATAAATCAATA GTATACAGCT ATTATTTATT TTCAGCCACT  
GTCCAAAATA TAGCCTGGCC TAACAACATT CTGTAGGAT ACGCAAGCAC CGTGAGGAGA TCAGCTATAA AGTATCAGTG  
TTTCACACCA CTGCTCCTTT GCTAATAACC TTCAATGGCT TTTAAAGAAG TAAAAACAA AGGCAAAAT CTTAGTCAG  
CCCTTAAGAC TCTCTGTAC TTAGCTCAA CTACCCTTT CAACAACACT GCCCTAACCA GGATGAGTTT TTTGCCCCC  
TGGAGTACAT TCAGCCTTTC CTTATCAAAC CTTCTTTTAA ATAAGTATCT TCTCCAGGAC CACTTCACTT TCTTCCCCA  
TTTAGCATTT TCTATATCTC CAGGCCTACC TCTATAAAGC CTGCTCTAAC CACTCAAACC CTAGCTTTT TCTGAACTG  
CTAGAAATAT TTTTCTCTCA TTGGCCATT AGGTAAAAAG GTTTTATCTG TTTATTACCT ACTCAATAA AATTTCTTT  
TTTTGAGACA AGGTCTTACT CTGTCGCCTA GAATGGGGG AAGTGGTGTG ATCACAACCT ACTGCAGCTT CTACTCCCA  
GCTCAACAGT CTTCCACCT CAGCCTAGTG AGTAGCTGTG ACTACAGGCA TGTGCCACCA TACCCACTA CTTTCTATT  
TTTATTTTT GTGAGATGGA ATCTCACTAT GTTACCCAGG CTGGTCTGCT GATCTCAATT GATCCTCCA CTGTGGCCTC  
CCAAAATGCT GGGATTACAG GCATGAGCCA CAATATCTGG CCCCAGTAAG CTTTAAAGGC CATTAAATG AGGAACAGTG  
TTCTTTACAC TATTTTATCA GCTAGGGCTT TGCATGGAGT AGGAGTTTAA TAAATGCGGT TGATGGGTTA ATCAATGTGT  
GAAAATATTC AGAGCCACCA AAAACAGATA TTATGTCTAT TCTCATCAAC AATCAAAAT GAGTAAACAG CCATTTCTA  
ATACAGGAAA CCACAAAACA TTGAATGGTG ACATTAATAA ATTCCTCCAG CAGGAGCAAA CCAATTTTT CTACTGATC  
CAAGTTAGCA AACTGCAAAA GATAGGAAGC ACTAATGAGT GGAAATTTGA GTAGAAGCAT TTCTTATGAA GGCTGTCTTG  
ACTGGATCAC ATTTTATTG CTGTTGGAGG TGCCAAATGT GTGTGTTTAT GCTAATCTC CACCTCAGGC AACACACAGT  
CAAGGATCCT ACCAAGTGT ACCGTCAAGT GTCTGTTGGC AGCTCAAGGC CCCAGCGTTG TTCCCTTGCA CTAGGGAAAA  
GACATATCC AGGTACAAGT ACTCCCACTT TGATGCTACA GAGGAGTTGC TGAACTTTGT GTCATTAACT TCTCTCGTT  
AGATCCCAAC CCGTTTAA TCCCCTATC GCTCTACTCT GGGTCTTAC CAATTACTA GATCATAGT GGAGAAAAAT  
TACAAAGCCT TGCTCCCTT AGATTAAAC AGGTCTCCGT TAAATTTAG AATTGTCTAAC TTCAAGCGGG CCTTCTGCG  
ACAGTATGCC TGTCACTCAT ACTACATTTC CTCAATTCCA TTCATGTGAC TGCTCCATAC CCTTCCCTCT CTCTTCATAC  
TACTATTATC TCTTCCCCC TCCCTCATT TTAAGTATG ATCTGTTTCT CTATTTCTCT GAGAAAATAG AAGCCATCAA  
AAGAGAGTT CCACAACTC CTACTGCCCT ATCTAGCCCT GTACCATATA CTTTGCATT CTTCTCATT CCATGGATGT  
ACTGCCTATC TGTGCTTCTA TCTAAGGCTA ACCCTTCCAC TTCAGTTTTG AATATTATCA GCTCTTACCA ACTCAAGGCC  
ATTGCTCTAG CAATCTCTC ATCTCTCTC ATTTCTTCC ATCAAGTTT CTTTCTTCT AATTAACAGA GTAGCTCTA  
AAGGGAAAAA AAAGTCTTCT TTTTCAATGC TCATCATCAC TGCCCTCAG AGAAATGCAA ATCAAAACCA CAATGAGATA  
TCATCTACA CCAGTTAGAA TGGCAATCAT TAAAAAGTCA GGAAACAACA GGTGCTGGAG AGGATGTGGA GAAATAGGAA  
CACTTTTACA CTGTTGGTGG GACTGTAAAC TAGTCAACC ATTGTGGAAG ACAGTGTGGC GATTCCTCAG GGATCTAGAA  
TTAGAAATAC CATTGACCC AGCCATCCCA TTAAGTGGTA TATACCAAAA GGATTATAAA CAATGCTGCT ATAAAGACAC  
ATGCACACGT ATGTTTATTG TGGCACTACT CACAATAGCA AAGACTTGA ACCAACCCAA ACGTCCAACA ATGATAGACT  
GGATTAAGAA AATGTGGCAC ATATACACCA TGGAACTA TGCAGCCATA AAAAATGATG AGTTCTATGC CTTTGTAGGG  
ACATGGAGGA AGCTGGAAAC CATCACTCTC AGCAAACTAT CACAAGGACA AAAAAGCAAA CACTGCATGT TCTCACTCAT  
AGGTGGGAAT TGAACAATGA GAACACTTGG ACACAGGAAG GGGAACATCA CCCACTGGGG CCGTGTGTGG GATGAGGGGA  
GTGGGGAGGG ATAGCATTAG GAGATATACC TAATGTAAA TGATGAGTTA ATGGGTGCAG CACACCAACA TAGCACATGT  
ATACATATGT AACAAACCTG CACGTTGTGC ACATGTACCC TAAACTTAA AGTATAATAA AAAATATAT ATATATATAT  
AAAACAATA AAAATAAATC TCTTTTTCT GCAGGATCAG TCCATCACCA CACACACAGG CTGTGTTTTA TGTGTTCCC  
CAGCTTAAGA GATCGTTCTC CAGATCCCAC TGCTCCTTC AGTTGTACCC TCAGTTCTCC ACTTCTTTT GCTGATAAAC  
TACTCTAAT AGTTACATAT GATTCTGTG CCCAGTCCC CTCCCTCAGT TGTTTTGAAC ATAACTATTT ATATCATTTA  
TCATTTTAC TCTAATTGCA CAACCAAAAA CTCCCTTTT TTTAGATGG AGTCTCACTC TGTCACTAG GCTGGAGTGC  
AGTGGCATGA TCTGGCTCA CTCCAACCTC CGCTCACGG GTTCAAGTGA TCCCCCTGCC TTAGCCTCCT GAATAGCTGG  
GATTATACAC ATGCACCACC ACACCTGGCT AATTGCTTG TTTTGTGTG TGTGTGTGTG TGTTTTTT TTTTTTGA  
CAGAGTCTCA CTCTGTTGCC CAGGCTAGAC TGCAGTGGCA TGATCTCAGC TCACTGCAAC CTCCACCTCC TGGGTTCAAG  
CGATTCTCT GCCTCAGCT CCCGAGTAGC TGGGACTATA GGCATGCACC ACCATGCCAG GCTAATTTT TTGTATTTT  
AGTAGAGACC AGGTTTACC ATGTTGGTCA GGTGGTCTG GAACCTCTGA CCTCAAATGA TCTGCGCACC TGGACCTCC  
AAAGTGTCTG GATTACAGAC TTGAGCTACT GCGCCGGGCT ATTTGTGTG TTTAGTAAAG ACGGGGTTTC ACCATGTTGT  
CCAGGCTGGT CTCAAACCTC TGACCTCAAG TGATCCGCTC GCCTCAGGCC CTCAAAGTGC TGGGATTACA GGAGTGAGCC  
ACCATGCTG GCCATAAAC TGCCCTTGT TAATATGACT GTTGGCCTGC ACATTGTCAA ATCCAGTGGC ATTCATCTTA  
CTCGGCCAAC CTACGGCATT TGACACTGTC TGTCTTCTC TCTGTTCTC TATCTGTTT CAGTATACTG GCCTGGCTTT  
CTTTTACCT CTTTATATG CTCTCCAGT CTCAGGCTCC TTTGGGGATT TGAAGGTATG TTGCATTTT CTATTCAATG  
AATAATGACA AGTAAGATC ACTTAAGACA TTAAGTGGC AGTTCTTTA CTAGGATAAA AATAATTTT TTCCCAACAT  
GGGGCATATT CCAATTCAG TCTGACTGT TGTGTAATC TTTGTATTC TTGGCAGCC CTTTATATC AGTTATCTA  
CTGTGCAGGA AATTGGACAA ACATTTGCAC TGGTATAACC AAATACAGTT GAACTTTTGG CTGACTCT AGCTGAACCT

ACCAAAAAATA ATTTCTGTAA GAGACTGAGA CGTCTACGAG TAGGTTTTTC AGAATTAGTA AACATAAATC AAGGATACAC  
AGGTAGATTT GAATTTTACA TAAACAACAA ATACTTTTTT AGTATGTCTA CTGAAATATT TGTATCTTAT CTGGCAATTC  
TACCTGGTAC AGAACTAATC CATTCTCTTG AAAGATCTTG ACTCTGTAAT AAGTTCTTTG GTGATGGAAG GGAGGTATTT  
CTGTAATTAG AGTCACTGTC TTCCTCCCAG TTTTATATCC TGGCCCAGAT CTGCAATGAA CACACGACAG AATCCAGGGG  
GGATGAAGAT GGGTGCTTTG CAGGAAAAAA AAATAAAAAA CATCTGAAAA AGCTTTTGTG CTAAGAAGAT GTGATCTAAA  
AAAGAAAGCA GGAGAAGTTT CTGTCTGCAC TTACATCAG AACCAACCTTG GCGTCTAGAA GCTGTGCCCT GTGGGAAGTG  
GTGGTGCTTG GTAAGAGATG CCAGGACCAG TGGTACCCAC TGGGAGCACT GCCAATACCC AGCAAGGAGC ATGGGTGCAC  
AGTAAGGCAT TGCACGTGTA TTCAGCATAA AATAACAATA AGGGAACGTC ACGGAGAAAA GGCCAGACTT CCTTTGTTTA  
GAATGTGGGA AATGTCTTCT GAAAAATGGT AGTAAAAAAG CATGCTTGGG TGGTCCACTC CAGGCAAAAC TGACTAATCG  
GGGGTCAGGG ATACAACCCC TGCATCATAT GTTTGTCTCT GTTGGGCTGA CATGAGGTTT ACTGTGACCA CTGTGTTTA  
ACCCCATAGT CTCCTGGAAA TACAGCCAGG TCAAGAGAGC TCCACATAAA ACATAATCAA AAAAAATAAC TCAAGTTTCC  
ACTGTCAGC TTTTACAAC TCTTATCCTT TCACTAAGT TGGAGCAAGA TTTGAGAATT GGATGGTAT TTAGGGGCTA  
TTTCTGCGCT TTAGTTCAAT GTTTGTCTCT TCTTTATTA GAGAAGTATG GTTTTTTATT ATATTACAT TTTAAGTTCT  
AGGGTACATG TGCACAACGT GCAGATTTGT TACACAGGTA TAAATGTGCC ATGTTGGTTT GCTGCACCCA TCAACTCGTC  
ATTACATTA GGTATTTCTC CTAATGCTAT CCTCCCCCA GTCCCCCACC CCCCAGACAG CCTGGGTGTG TGATGTTCCC  
CTTCTGTGT CCAAGTGTTT TGTATATGTG ATAGATTACG TTTATTGATT TGTGTATGTT GAACCAGCTT TGCATCACAG  
TCACTTGCTT ACAAGAAAAA AACACTTCAC AGATGGATCA TTATGTGTGA TAAGTGAAT CCAAGGATTT ATGCTCAGAG  
GTGGGCTTAA CAGGTAGGAA GAGCAGTATT TTCTTCAAC CATGAGTGA TGCAGGTTT TCTTTCTTT TTTGAGATGG  
AGTCTCACTC TTTTACCCAG GCTGGCGCCG AGTGGTGCGA TTTGGGCTCA CTGTAACCTC TGCCACCTGG GTTCAAGCAA  
TTCTCCTGCC TCAGCCTCCC AAGTGGCTGG GATTACAGGC ACCTGCCACT GTCTCCGGCT AATTTTTGTC TTTTAGTAG  
AGATGGGGTT TCACCATCTT GGCCAGCCTT GTCTGAACT CCTGACCTCA TGAATCATCC TTCTCAGCT CCCAAAGTGC  
TGGGATTACA GGCATGAGCC ACTGCGCCCA GCCCAGAGGT TTTTCAAAGA CTAACCTTAA AAAAAAAAAA AAAATTTCCC  
AATGAAATAT AAACTAAAG TGCTAAACTG TGATAGACTG TTTTACAAGA ATGCCAGTT TCACAAGTGT CTATAGAACA  
TGTAATTTAG ATAGGTAAGA TGAAATTTTG ATAATTTTG ATGGCAATT TAAACAGGTA TACAACAAAA ATAAATTTCT  
AAGCTCACTA ACCAACTGAA TGGACTCCTT CTCTCAGCCA AAGGAATACC AAAGTAAACC TGAAAACTA GTTTGGCCA  
GGATTGGGGG TAGGTGGGGG AAGCCCAACA TGACTCATT TTTCTCCTC CCTTTGGAAT TCAGGCACAA CTGAATGTCA  
GCATTGACAC TAAACACAG ATCTTAAGAC TGACAAGCCA GACTCTTGT AGCAGAGAGC CAGGCCCTGG AAGAAATCAA  
GTTATTTTAT CCAAAAAAT ATTTCTTTGA TATATTTTCA AATGGCCTG CAAAGCTGT TCTGTGGGG AAAATTGACA  
TGCTGTACAG AATTTCTTTC TCTTTCCAAG TTTTACTGA TCCAGGAGAG ATTTAACTAA GAGGCTAGCA TGTTTTTTTT  
TTTTTTTTT TGAGGCGGAG TCTTGCTCTG TTGCCAGGC TGGAGTGAC TGGCGTGATC TCAGCTCAT GCAACCTTCG  
CCTCCCGGT TCAAGCGATT CTCCTGCCG AGCTTCCGA GTAGCTGGGA TTACAGATCC ATGCCACTAT GCCACGTAA  
TTTTGTATT TTTGTAGAG ACAGGGTTT ACCATGTTG CCAGGCTAGT ATTGAACTCC TGACCTCGT ATCCGCCAC  
CTCGGCTCC CAAAGTGCTG GCATTACAGG CGTGAGCCAC CGTGCCAGC ACAAGACATT TACCGTCTAT TCTCTGTAA  
GCTACTATCT AGAGGCTTCA TCAACATAAT AAGACCCTTG GTCTCCACAA CTCCTTATCT TATCCTATTA GTTCTACTG  
ATTCAGGTC TTAGATAAT AACAACCTT TCAACCAATT GCCAATCAGA AAGTCTTTGA ATCCACCTAT GACTTAAAG  
CCCCACTCT TCAAGTTATC CCGCCTTTCT GGACTGAACC AATGTACACC TTATATGTT TGATGGATAT CTGCGTGAA  
CTTCCATTCC CCAATATGT ATAACATCAA CGTGAATACC AACCACTTG GGCACATGT TTCAGGAAT CATGAGACTG  
TGTTGCAGAC CTTGGTCACT CATATTTGCG TCACAGTAAA CTCTTTTAAA TATTGTATAG AGTTTGGCTT TTTTATTGA  
CACAGGAAAA ATAAAGAATT GGAAGGTCTT TCATCAGTCA CTGAGCCAGC TTCATATCTG ACTGAGGTCA TACAGTTCAG  
TGATTTGTAG CTTTGCTACT TAGATTGCTA TCCATTATCT AGAAGCATCA GGATCACGTG GGACCTATTG GAAATGCAGA  
CTTCTCTCT AGAACCAGG ACCTTGGAA ATCTTGGCA CATAGTAGGT GCTCAATACA TATTGAACTC CTAGGTGCAA  
TTCATTAAT CATGAATTA TGAATTAACA CGCTCTCAA GTTTAGTGCT TTTTACAGA CTAGTCTTTC TGCTCTTAA  
GCACCTAGCT CACCAGCTT CCAGTCTCAC TCCCCTATTA GTCTGATTA AATCTGCTTA ACTGTGAGTC TGAGACTAAG  
TGTTATCTCT TCTGAGAAGT CTCTCCCTCAC TGGCCCAAAG GAATTTCTCC TCTATTTTAG CATGTGCCA GTTGACTGT  
CATTATCTA GTCTTTTCA TATTAGTTGT TTTTATATA TATGTTATTA AGGAACTAG TCATTTCCCC TAATAGAACA  
AAATTGCTGG CTTTGGGGT TGGCAATGGA GGGGAGGCTC TCTTGAAAA GGGGGAAGAG TGTCTCTTA ATATTTTCT  
TACGAGATT ATGTTGCTCA TCTTAGCCT TTAGTCCCC ATTGCTGCC TACAGTTGGC AGAGACCATC TGTCTCTCA  
CTGTGAGGAA CTGTCTCAAT TCTTGAAGT CAGAGTCAA AAAGAAGCAA GTTTTCTAG CTCTTTGATC AACTTTCAA  
GTTTACTTC CATTTGAAA TTTACTAAGT CACAGGAGA TGGTTTATAC TGAGAAATAT CCACCTATC TTTCTCTT  
CAACTTTCT CATATACAC CCTATTACG GGATAGAGT TTACTCTATA GCTCAAAAGG ATGACCTAT CAGAAACCTG  
CACAGTATGT AAAACATTCT CACCAGAGGT TCACTTGTGT ATTTCCACC TAGAATGGAA GCTCTACAA AGCACAGAAT  
GTATCATTT AACTTTAGAT TCTATTTTCA CACCCAGTGC TTGACACATG ATTTGAAGTT AATATTTATT TATCAAGTGA  
TTGTTTAAA ATCATGACTC ACTCAACAAA GTTATAAGAA TAAGAATAGT GTTACAGAAT TGGTATACAC AAGCTGACCA  
TAATCAACAC ACCTATTATC ATTTTTTTC GACAGGTTCT CGCTGTCTCA CCTGGCTGG AGTGGAGTGG CATGACCAG  
GTTCACTGCA GGTGGAAT TCCAGGCTCA AGCAATCCTC CCACCTCAGC CTCCACATA GCTGAGCCCA CAGGTGTGTG  
CCACCATGTC CAGCTAACTT TTTAATCTT TGTAGAGACA GGGTACCCT ATGTTGCCA AGCTGGCTT GAACCTCTG  
GCTAGAGAGA TCTCCCTCC AAGGTCCCC AAAATGCTGG GATCTCAGG AAGAGCCACC ATGCTGGCC ATAATCAATA  
CACTTTAAG AATGCTAGAA TGTATATCA GATGCATCT TCAGCACTAT CTCAAGCAA CTGGGGTGTG GGTATTCTA  
CATATAAAGT TCAGCAGTGT TGTCCACAG TCCCAAATC CAACTGAGGT CAAATGTAGG GTGAGCAAG GTCAGTGGG  
CTGTACATA GGGCCTCTCC TTGCACTCTT GCCAACCTG TTTCTTGATT GTCTCTACCA CCATGAGTCA CCAGCAATCT  
CCCACAGTCA CTGTTTAAA AGTTCACAAG TATTGTGTGA ATGTCAGGCA ACCCTTGAC TCCCTGATTG CCTGGTCTTC  
TTCTTGGGCT TCTACCAT TTTTCCCCA GCACCTTCT TGCTGCTCTA AATTTAATT CATGCAATC CATATGTGT  
TCTCTATCAT TCTCATCTC TTTCTCTCC TTCCATCCA ATTTTGTG TCTGTTTGT TGTGTTCTG TTTAATACA  
TTTCTCTTT TCTGAGAAGG CTGAGTCCA AAACCTCTAG TTACCTGTTG TCTGTTTCC CGTTAGTTAA TCTCCGAACC  
TTCATAAATT AATCTGACA AAGTCCCCTG ACTAACAAAG GAAATGCACA AGTCACAGTA AAAGGGGCAC ACACAGAACA  
CAAATAGACC CAGGTCTTT TCTGTTATC ACTCAGCTT TTATAGGAGA TCCAGGAGAA ATGAAGTGA AAGGGAAGTG  
TGTGAGTTA CTATACAACA CAAGAGTAAA CTCTTTATA AGTGGTAATT TTTTTTACA GGAATAATTG AAAATGGAAA  
TTACCTCTC TACTCATAGT AAGTACTCAG TCGTCTCTG ATGGGATGAG AATGTGTTG AGCTTTAGTG TAAGGCAGAA  
TTCTGTTTAG TCTGCCAGTA TTGGAGAAAA ATAAACACA AAGGACTGA CATGTAGGAA GTGGCACCTG GGAGGGTCTC

AATTCTTCTCT ATTACAAAAA TGCCCCAGAG AAATAAAAAAG CTGTGTGTACA TGTTGAGATG GGAGAGTTCT CTGGCCCCC  
TCGCAGGATG TGTGACAGTG GGTGGGCTCT CTGCTGCGCC ACCATGAGCT CAAACCCCTC ATAGGAGGGG GAGCACACAG  
GCAGGAAGGT GCAGGAGCTG GCGGAGCTCT TTGGGCTCTG GCCCGTGGT ACTGTCTAGA GGTGGGTGCC TGCAACTCCT  
GAAAGCCCAA GTGGGCATGT GTTACAGTGC ACTCTTTTCA CTTTGCTGTC TGCAGCTTAA GCGTTAACCA GCTCAGTTTC  
TTCTTGGTAC CCAGGTCCTT GTCTGGCATC CAGGAAGAAT CAGGTATACAC ATGGACTTGA AGGATGAATG TGGGAGTTTT  
ATGGAGTGGT GGAGGTGGCT CTCAGTGGGA TGGATGGGA GCTGGAAGGG GGATGGAGTG GGAAGATGAT ATTCTCTGG  
AGTTTGGCTG TCCAGCAGCC GATCTCTCT CCAGTCGTCC CCAGCCTCTC GACGTTTACA TGCTCTCTT CTCTCTCTT  
CTGCCATGCT GTTCTGCCGT TCATCTGCTT GTCTCTCTT GGAGCCTGGA ATTTGGGGT TATATGGTAC ACAATAAGGG  
GCATGGCAGG CAAAAGGGA ACTTTTATAG TGCAAAAAAC AGGAATGCCT CTCTCACTT AGGGCTATAG ATTTTCAGGC  
TTGAAGGTGG GGCCTTTACC AGCGAACCTG TATTTCCCTG TCTCTGTGC ATATCAATGT AATCAATATC TGGGCTGATC  
CAGGATGTTT CTTTAGACCA ATTATGGTA AAATAATTA CATTACGTT TTTATATTG CTTTGTCTAT TCTTTTAA  
GCAATCATGT AAAATATCTA TACGACAGTA ATAGATGATA GCGAATCAAA TAAAAATTAC CAGAAACTTA AGAATCTCTA  
ATGATTTCAA CTGTAACATA GGTTATTTCT CTTTATGTTG AACAATGTTG GGAGATAAGA CACAAGAGTT TCTGAAGTAT  
TTCAGAAACA CAAAGAGGGA GGTTATATA ATAATATTTT TTTCTACTT TGGGAAAAATG AAAGCTAGTC ACAAAGTTAA  
ACGAGTGGT ATTITAATAT TAAAAATACA GGCTTGGATG TATTTCTGT TAAAGAAAAAT AAAATGCAGA ATATTCAAAA  
CGTCTGACCA CCCTCTAAG AAAATGCATC TCTGAGGTAT TTTTCTTAG AAGTTATTGT AAAATCCTG GAGAAGCTTG  
AACACAGCAA AGCAAAACAG ATGCAGAGTT TAATCTGTGG AAAGCTTAGG GAAGAAAAGC AAATCATTA AAATAGGTCT  
TCTCTGAAG ATTTTAAAA CGCAAGAGG GTGGAATAGC AATGATAATA AAAAGCTGG CATAGAGATT GGCACAATTT  
GCTGTGCCAC TGAGCTGACT GGATGTGTT TGAATTTCTA GGCATTAGTG TACCTTTCCA CACGACTTCT CCCTTTAAAA  
AAAATGCCCA CACACTGAAT ACTTTTTTCA TGCAATTTAA AATAAGCGCA CCATCTAGTT TACAGAAAT CACTAGAAGT  
TATTTATCCT AAAATAGCAG AGATCTAGAA GAATTTTGAG CTCTAGGACA TTTTAGACAC ACAGAAAGAA GAATCTGGAC  
AAGTCTTGAC CAGACATGAC AGAATAGAAA TTTCTTTTCC TATTTATCTC TTTGAATAAA ATTTTCAGGA TCTTACAGTG  
GACAAGTTTG TTAATCTACAC ATTGTGAAGC ACATTGATT CTCTCTGTA GCCTTAGGAA GATCTGAGAG GTGACTGAGC  
TGATTGAATG ATCCGTGACC GCTCTACTGG GACCAAGTAG AGAATTTTAC TGGTGGAGAC CTGCTGGAGG TTTGAGAGCA  
GACTTTGAAA ATTACTAGAG CTACACAGAT ACTGTGTGGC TAACTGGATT ATGTTTAGAG GCCTTCAGAA CTATGCTGT  
GCTGTGCGAG TGTAGCCAGG ACGCACAGAG AACATCTAAG GCTCTGAAT GGGGCGATAG GGACAGATT CAGCAGCCAT  
CTGACTTCAG TGCTCATTTT GATGCTTTCC CTGCAAGGGT CAGTGTGCG TGTGAGTGT GCAGTGGTGG GAGGCTCACA  
CAGGAATACT TGCTTCTGTA GCCCTAATTT CCGGTTCAA CTCTGCATTC ACCTTGACAG ATCTTTCTCT TGGCCAAAAAT  
TTAGTTAGGC TTTGGGCTT TCTCTATGC CCACCTGAC ACTTTTGGT AAAATCCAGT TTAGTAAAG AGCTCTGCTA  
AGTCAGTTA GCAAGAATCC CCACCTCAA AGTCAATATC TCCCTCCTG GTAGTGTCTG GCTGTCTTC AGCGAGAATT  
CTATTAGGT CTGTTAGATT AGAATCTCTC TTACCCTTGA TGCTTCTCT TAGTATTTT TCATCCACT ACTCCTTGAC  
CCACCTTGT CTCTGGCTAT AAATCCAC TGCCCATAC TCTGCAGTA AGACTATTTT CTCCCACTA CTGCAAAATC  
CCATTGCCAT GGTCCCTATA CTATCTCAAT GGTAATGAAT AAAGCTGCTC TTACCATGCT TTAACAAGTA ACATTGAACC  
ATTTTCTCT TTAACAATCT GCTGCACAAT GAGATTACTA AAATTTTATT CCATTTTGCC ATGCTGGATG TCCTCAATGG  
AATGGCTGTG TTAGGACCA AATCATGTG AGAAGGAAAA CCCATCTCT ACAGCCCCCT GTAACGTGAT GTATGTTACA  
TGTGATGTAT GTTACATAGT TTTTCTCAT GTTGATCACT TTTTGGCCAT TTTCTATAT CTTATCAGT GGAAGACTGT  
GGAAGTTGT AGTACTAAGC CACAAGATGA CTAAGAAGAG TTGAAAGGGC AAGTGGGGCT AAAAAACAGAT TTTGTTTGAC  
TTACCCACC ATTCCCTTA TCATGGGGCT GAATCTGCT GGAGGAAGGA GCATCTTTAT CTTTGTACTG TGAACCACAC  
AGTCTAGCAG CAGCACAGCC AAGGCATCTG GGGTTTCATG AGACTAAGTA CATGCAATTC TATTGTAAAG GCTTAAATA  
TATACAATG ACCCTGAAC AACATGAATT TGAATTGCAT GGTCAGTTAT ACGCAGATT TCTTCCACT CTGCCACCC  
TGAGACAGTA AGATCAATCA ATCCTCTTCC TCCTACTCT CAGTCTACTC AAAGATACTT GAAGTCTACT TGAAGATGAC  
AAGCACAAAG ACATTATGA TGATCCACTT CCCTTAGTG AATAGTAAAT ATGTTTCTC TTCTCTCTAA TTTTAAACA  
CTTCTCTC TCTAGCTTAA TTTATTGTTA AGAATACAAT CTATAATACA TATGACATAC AAAATATGTC TTAGTTGACT  
GTTTATGTTA TCTGTAAGGC TTCAGGTCAA GAGTATGCTA TTAGTGGTTA AGTTTTCGAG GAGTCAAAAG GTGTATGTGG  
ACTTTCAACT GCAGGGGGGT GGGCACCCCT GCGCCCATGT TGTTCAGGG TCACTTTAC TGCCAAAGGC AAGCCTTTAC  
ATCCACTTTT TCCATCCCAT CAGTAAATGG AAAAAGATAG CTACAGTATC CTGCGTCAA ATCTTTTTT TTGCAGATCA  
CAAAATGGCC ACTCACTTG CTCTGTGAGG GGTAAAATGC CCCACTTTCT TTAGTAATAT TTAAGTTAGA TAATATTTAA  
GTTATAAAGT TGTCTTTGT AATCGTAAAT TGTAATTTT ACATAGTTTC TTCAAACAG AAATAGCAAT TTTGTTAGT  
AACCTCCGT ATAGATGATG AAATCTCTT TAAGGGCTAT CTGAATTTTA ATCTCTGAA AAGGCAGAA TTGGATAGCT  
AGTAGTCATA AATGACTGT GGTCTCCCC AACCATCTGG GCTATATAGA AGCTGCATCC TTGGACTGCA GTAGAGGAGT  
CTTCAAAAGC ACAGAGCAAC TTCTCTCTG GGTGCGCTA GTTATGATGG CAATTTTAAA TGTGTACTTT TACCAAAGA  
AAATCTTAT TATCAACAAT CACAATGCCA TCATAACCAT GGTATAAAAA ATTCAAAATG TCCCAGCTGA AGTGGAGGCA  
AAGACTCAAG TCAATGGAGT CAGAGTTTCC TTGCTATTCC TCTTTTCAA ATGACCATT AGTAAGCACC TGAAGAAAAT  
ACTATGGAGC GCATTGAAAA GTGAAGATAG GTTAAATCTT CTCGAAAATC TAATCTCCA GATGAAACGC TGACACTTAT  
CCACCCACA GACCTATAG CAGATGTGTC ACTGGCCATC ACATTTGACA CAGAGAAGTC ATAACCTAGT CAGCAGAGAG  
ACATTCCAT GAGTTTCTGA ACCATGGACA GAACGTCGTC TGTGGGACAT GAAAAGTGG ACTTAGAGGA CAGGCACATC  
TGAGAAATGG CAGTTTAAA GGCAGAACAT AGCAGATATG TACTGGGT TTAGAAGCAA ATTTACAAGA CGCACTCTT  
TTCATCTTAA ATAATCTGCA ACCAAAGCTT CAAAAAAGA CAATTAGGA ATGCAGAGG GAGGAGTAGG GAGGGGAATG  
GGATGAGAGA GAGTGGAGAT TAATGGTGGG CAGAGCGAGG TTAGAACTT AGTGGTTCTC TCAGGTCTG AACTGAAAT  
TGTATACTGT AAAGGCACAA ACACATTTT TAACAAAAGT GAGCAGGACT TCCTATCTGG TTCAGAAAAAT AGGTGAATAA  
ATAGTACGAA TTATTAATAA TAATAATTT CACTATACA TAGGAACCT GATAGGAAC ATGATAAATG CTTAACTCTT  
AATCTTCAAG GAACTCTGCT AGGATATAA TATTATAAAT CTGTTTGC AGATGGAGAA ATTGAATTTT AACCAAGTT  
ATCATAACCC TTAATGATT AAATGATACT GTTACATGAG AAAGCTGCGT ATCTGTTCC TGGATTGTA GCCATAATT  
GTGTCTCAAG TCCCTTTTGC TGCCAGCTAT CTGGGTAGG TGTGTTCCCT TGGGCTGT TGTATCCCC ACATTTATCT  
TTTTTTTTT TCTTTTTT TGGAGAGAGT CTTTCCCTG TGCTAGGCT GGAGGGCAAT GCGCGATCT CGGCTCACTG  
CAACCTCCG CTCTGGGT CAAGTGCTT TCAGGATTCT CTGTTCCAG CCTCTCTAAT AGCTCGGATT ACTGGCATGC  
ACCACACGC CCACCTAAT TTGATTTTT AGTAGACAAG GGTCTTCTC ATGTTGGTCA GGGTGGTCTC AAACCTGTA  
CCTCAGGTGA TCTGCTGCC TTGGCTCCC AAAGTGCTGG GATTACAGGT GTGAGCCACC ATGCTGGCC CCAAATTTAT  
CTTAATGCC CCAAATATC TAGTCCCAT GACTGGCTT CTGCTTGAT CTTTCTGCA CTTGCTGGAC CCTCTCCCTG



GGAAATGAGA TTGTGCTCTG AGCCCCTAGT TAGAGGCTAT GTCTCTGCTG TTCTGAATG GGCCTCCTGG ATGAGACCTC  
ATTAAAAGTC TAATTCTCTT GGAGAATTGA GAGATACCTA TTTGTCTCAA AATCATTGAA ACCAATTAAT GTATTATGAG  
CCTCTATCCA GTGATTGTGA CCTCAATTCC CCAATCCAGC TGTCAGGCCC AATTTGTCTT ACCTTACCTA GTAGGTAAGT  
CTGGAATTGT AGCTGTGGCA TTTTCAGTAA TGGTACTCTA GGTAGCAGT CCCCACCTT TTTGGCACCA GGGACCAGTT  
TTGTGGAAGA CAATTTTTC ATGAAGGGCT GGGCAGGGGA GTGGTTTCAG GATGAAACTG TTCCACCTCA GATCATCAGG  
CATTAGATT TCACAAGGAG TGGCAAGCT AGATCCCTCA CACATGCAGT TCACAATAGG GTGTGCACTC CCATGAGAAT  
CTAACACCGC TGCTGATCTG ACAGGAGACA GAGCTCAGGC AGTAATACTC ATTTGCCTAC CGCTCACCTC CTGCCGTGCA  
GCTCAGTTCC TAACAGGCCA CGGACCAGTA CTGGTCCACG GCGCAGGCAT CAGGGACCCC TGTGTCTAGG TATAAGCATC  
TGGCTGCTGC ATGTCTTCTG TGTAGCTACA TCTGTATGTG TATCTGATGA GATATAAATT ATTTGATTAT AAATTACTTT  
CTTCATATTA GAGTTGTGAA TGAGTATCAC ATATAATTAT ACATAAACTA GGAATATGCT TTTTAATAAT GTATATAAGT  
AAGTTTCCTT AACTATGACT TTCATCTTAG CGTAGTAAGA GGGTGCTAAG AAATATTTGT GATGAAAAA GGCATTGGTA  
GAGTTGAGAC CACTGGGTGA TGAAAGAGTG TAAAGATT TT AAAGCCTTCA GATGCTGGT CAAGGTGAGA AATGTGATTG  
GGAGCAAAATCA AATTAACCTT TTGAAGTCTT ATGAGGCAGT TATGAATACT TAATGTAAAC ATATGTAAAG CTCTTCTGCC  
CTGTATACAG TAAATGCTAG TTAGCTATTA TGATCACTAC TAAATGGGG ATGACATAAA CCTCATAAGG TTTTAAGTAT  
TATGCAAGAT ACTATACAAA GTCCAGTAAA TATCACATTC AATTGAATCC ATGATGTCCG ATTATTTTAG CTACTTCCAA  
GAGAGAAAAA AATGCTGTCA GTTTTACTGT TCTTATAGAG AGCAAGGCAG ATCCCAATTC CCAATGTGGT AACGTGAAAA  
TTTTTGCAAT TGAATCAACA AAACACTTTC TCCTTCTT CTACTATT AACAACCTGT AAGTCTATAC TCCCCAAAT  
CTGGAATTCT CTCTTCTTAT TCTTTTCTCT CCTACCAAGA CCGCAGGATC TTTTACTTGG CTATAAGGGG TAAACCTCAA  
GTAGTACAAG TTCTGTAT TACTTTTATA CTCTGTACA GATTCCTTT GTTTCCTCAT CTCCATGTGA ATTAGTTAA  
ATTCTCAGCA TTCTGATCCT TACTATACAA GGTAAATGAA TATAAAAAA AAACGAAAAA AAAACCTCTT CCTATTTACA  
TAAGGCCCA ACCTAATATT TAGTGATATA TATTAATGTG AACAAGGAAC TAACGAAGAC TGGGAAGAAA TTCACAGACT  
TGAGAGAAGA AATGGCAGGA TTTCTGGGA ACAATTTT CATGTAACGTCAA AGGTGGTAAA AGGTCAAATA GAATGAAGAT  
GGAGAATACC GGATTTTCTT ACAAATGAT TTCCAGGAG ATCTCATCAA ATGCACGAGG ATACCTTCTC AGTTTCACT  
AGTGAGTAAA AGACTGGTAA CATAGCTCAC TTACAATTTG GATAAAAAA ACTAAACAAA CAACATCAA ATTTAGAAA  
AAATAATAGC AAAACAGAAA TCAACACTC AAATTTTGG TCCTTCTGT TATTTTATT TGGATCTCA GTGAACTTTA  
ATTAACCGG AAACCTTAAA GTTATTTCAA TTATGAACCT CTTCATCTCT TCATCAATTA TTTTGTAGTAT TCTGGCTTAA  
AAAAATCTC TTTCTTCTAC AAATCTTCTGA AAGAGATGAA CACCTCCACC TACACAAAA TAATGTGCTT TGCTGGCCAA  
AAGTACAGT CCATTTTAC TTAACAGTCT AAGGAAAGTC TGGTGCAAT TACTATAATA ATCTGGGTG TAAATGGTTT  
CTGAGGTGAG AATGAGATCA TATTTTACAA AAAGTTTTT ACTACTTAGT ACAAGCTTAC AAAACTCAGA CCACTACCA  
GAAAAAATC GGCATTATA TAGTTGTGTT ACTTTTGGT TCCTGCATCT TTTACATCT GGCTCATTTA CATCATTTTC  
TTCATCTTCC AAAGTGGAGT TAGCTACTAC ATTAGGTAAG GTTACTTCT CAATCACCAT ACTGTTATAA TCTTGAAGT  
GAATTTCTTT GACCCTCCC TTGAATGCAG TTATACCTAG TAACTCTGAT CCACAACCAA GCTCAAGATG TTTTCCCA  
GCAAATTTCA CTTTGGCCTT TGTGAAATAA GCCAGGAGGT CAAAGGTACA TTCCAGATT TTTAAGCCTC CCTCATAAAC  
ACCTGTAATC AGATCAGAGT GAGAAGAAAA GCTTTTGA ACTATGTTT CTCCAGGGAA GTTCTCTTTC AACAAGATGG  
TTTTCTACTAC TGATAACTTA ACATGCTGGA AACCTGGTAA TGTTCCTATG ACTTATTTT CTAACATCTT CTTTAAATCT  
TTAGGCATAG CATGCTCTT GGCAGCTCTC AAGGAGGGCT GTTTTCCATG TGGCTCCAAG TTCTTGAAG TGCTGGCTGC  
ACTGAGTGGG CTGTCTGTGT CTTGAGAGGG AGCTGCATTT TCCATTGACT TATGTTCCCA CAAGTGATCC TGAGGCAAGT  
CAAAATGTTT TGCAAGACAT TTTCTGTCCC TCTCTTCTC TTTTGTACT TCTGAGACTG ACAGCTCTT TGAGGAATCC  
AGGTCAAAG CTCCATCTCT AATGGGTGTT AATTCATTT CCAGATGGTC TTCTATAGTG AAATTAACCT GAAAGGTCAT  
CCTCTTATTA AATGCACACA ATCTTTAAAT TCAGATTCTT CAACTTCTGG ATAGAATTG ATGATACACA CAAATCTGCC  
TCAATTATTC AATTAGTTT GTTGGGCCCA ATTTCTCTT AGCAGCTTAT ACATGGTAAC AAATATTTAG AGATATTTCC  
AAATGACTTT TTAGACGTCT TTGGTCTCT TTCCAAGCAG CTCTGGAAG AAAAAAAAAA AAAAAAGAAA GAAAAATGATG  
ATTAAGCAA AATGGACAT TCACTAAAAG TGTAATATTA AACAGCCACC CCCACCCCTC CCGTCCCAC CATACAGCTG  
CTTTTCTTA AAAAGTTGTG GGAAGAGAG AGAGATAAGA GATTGGACA CTCATACCA CTTAAGGGT TCCAAAGTGG  
GAGAAGAAAA TCACTATAA AAACAAACAG AAGAACAACA GCAACCACCA CCACTACCAC CTGGACAAAC ATAAAGTCCA  
AGATATTAG ACAGGACAGC CTAGCTACTT GCTGTCTTTC AGCTGTCTTG ATTTGTGTCC AACCATATTC ACCCCCTAAG  
CTTCCAGAA AACTTCACT CTGTCTTTA CAGAAGAGT GCAGTATTT ATTTTGGTAA GTCAGCGTCC CTTTAAAAAC  
ATGCATAGGT ATGGCCTGGT GTGTGTAAT TCATCCAAGA CTCACTCCA AACATTTAGT CGAGAACAGC AGCCCTAAGT  
GTATAGAAGT GGGGGTAATT TGGCAATAAT TAGTAAGAC TAATTGGTG GCAGAGCAA CGCAAACCTG GGCATGCGAG  
TAGTTTGGAG AGACCTGTAG AAATAAGAG CAACTTTATT GAGAATCTTC TATCTACTGC GCTAGACACT ATACCATTCTG  
CCTCAATTTT ACAGTTCTG GCAAGTGGGA TCTTTGTTC CTTTATACAA GATTTACAAT TTGGGGGAGA GGGGGTCCAC  
CCAGTCCCAG GGTAGGAAC GCGCTCTT CCTCTCCAT CACGCTGCAA GGCTTGGAGT CACTTCCGGC TGCAGGTCCC  
GGAACAAATC CGACCCAGA AGTGGGGACT TCTGGCCCTC ACCTCCCAT TTGAATGTAA TGTTCACAGT GATCCAGACC  
TGGGGATGCT TGCTTCCGA CGTGTCTGG GATCGCGCTT CTGAAAAAGC TCACCTACA ACGCTCCTC CGGACCTAAA  
TCGCGCACCA GTGAGTCGAG TCTCCAGGG GCTAGAGAAG CCGAGCTTTC TTTCCGGCTC TGAGGGACCC GGGCTACCA  
AGAAACAGC CGCCCTCTC TCTATGTTT TGGAGCCGC GAGAGCTCG CAAGGTGTTG CGGAGTCCG AGTTTCCGGT  
CTGGGCTTTG CGGGGTCTG TTTGAAGCTC TCTGTTTGA CGAAAGTATG TCTCAGGAAG GTGCGGTCCC AGTACGCGG  
GTTCCCTGG AAGAATTAAG TAGCTGGCCA GAGGAGCTAT GCGCGCGGA ACTGCCGTCC GTCTGCCCT GACTCCTCAT  
ATCTTCTCTT GGTGTGCTACT TCTACCTAGA GAAGGTGTG GCGGGTCCG GAACCTTCT CTCTGTCCC TTCAGACCA  
CCGCCAGGCT GGTATATAT ACCGCGGCT GAACCCCTC TTTCTTTGT CAGTGAGTGG GATGAAAGT GAGGGACTGG  
AGGGGAAGCG ACAACGTGG TAGATTAAAG TAAGGCTTTG GCCCTGGAAG GCCTCGCGGA CGTGTCTGA CCAAGGTTT  
TAGCAGTGA TGTGGCGTT TCTTCCATTC CTCTTTTCA GTTTTCTGTA CTCGTTGCTT GCAATTAAGT GTAATACTT  
TTGCTAGTG ATAATGGGG AGGCAAGGAC TGAGACCTGC TTTATGACGA TAGCTCTGGC CTTAATAGT TCGAGGTAAA  
GCGAGATACT CTGAGCTTTT GTCTCCCGTA AAAAGGGTGG TGAATAGAA TAAGGGCTTT CTTAGCGTTA TAAGAATTAA  
AGGGCATAGT TCTGTGGTGT GAAATCTTTA AAAGATGTT AGTAAATAAA AATGATTTT CTCCTTCCCC TCTCAGACCT  
CTTTTCTTC TTTCTTCTT TTTTGTGAC AAGTCTCAC TCTCTCAC CAGGCTGGAG TCTTCTGAA AGAGTCTTC  
CGCTTGTGT TGGCTTTCAA CTGTGGATT TGAGGCGCT AGCCCTTCT TCGTCCGGGT GCAGCACATT CTGATTGGT  
CTCATGCCTT TGTGGTTGTA AATGTGCCTG GAATCCTAGC CTTTCATGGT AAACCATATG TATATGTATC TTTTACAA  
CATTTGAGCC CAGCTTTATA CAATTACACT CAAAAGAAAA AAAGTAACCT TCACTTGAGA GAATCTCAAT ACTGCACAAA



TATTGTGCGAG CTAAGCCCT ATGTAATCAC ATAGAAGTCA TTCACCTAGG CATTAGCAAA ATCTCAGAAG GTGCCAAAGC  
CCCCTTTTT AGTTTTTGTG TAGGTACAGA ACTGCCGTCT TCAAGGAGTT TCAACTTGAA AACAAATAGC CACCCCTCAA  
ACATTCAAAA ACACCTAAAC TGCGTGCATA ATGTGTGTGA GACATGGTGT TAGGCTTTGG GAGAACAGAG ACACGGGAACG  
TGATTCCTCT TCTTCCCCAC AAGCTTATAG AGAGACTTCA TTAAGTTGAA AGTCAACATT CCCACCTAGC TTTGCACTTC  
AAACGACATA TTCAAAAAAG CCCAAACTTC CTCTAGTTTT CTTCATCTGA GTAAATGGTT TCACAACTG AAACCTTGAA  
TCCTCTCTGT CTCACACACC CGATCAGTAA GTTCTATTGT TTCTGATTCC AAACATATGC TTGAATCAAT CCGTTTATCT  
CCATCCTCAT TGCTACCACT CTGATTCCAA ACCCTTATCA CCTCTCACTT GGAGTATTAA TAGTTTCCCT GTTCTACTC  
ATAATTCATT ATTCCAAAA AGTTAAGAGG GAAAAACAT AGATCTCGTC ATTTCCCTTT TTAACCCTT TTACCTTCAA  
GGTTCAGGT GATCTAAGCC TTGCCCTTCT CTCATACCTA GTTAATTAAAC TACACTCTGT TCATGAATAC ATTAGGCTCA  
CCTACCTCAA GATCTTTTTG CTCAGCCTGA TTGTCTCTCT CAGCCTTTTG CATATTTTAT GTTTATGTCT TGGCCCAAAT  
GTCACTTCTCT TAGAGGGGCT TTTTCAGAGC CTCAATCTT AGGCAGTTCC CCCAAACGCA GTCTTACACT TGTATCATAT  
TGGCCTGTTT AGTTTTCTAA AAAGCACATT ACCATAAAAA GAAATGCTCT TGTTTGCTTT GTATTATTTT CACTTCTACA  
CATTATGTTG CAAAGTTTAT AAAGGCAGGA TGTGATTTTT CTTCACAGCG TTACCCTCAG CACCTAGAAC AGTGCCTGAC  
ACATAGTAAG CATTCTTAA AGGGCTAAAA ATATTTTCATG TTTTAAAAAT ACTTGGGAGT CTAATTAGAC AATACTTTTT  
TTCAGCTTAA TGGTAGTATT TTAGCTTCAC TATTTTAAAC AATGAAAAAT TTGCAATAAA TCTACAATGC CATTACCCCC  
CAAAATCTTT TCTATGTTTT GCATTTTACG TATTATTTT CAGGCCTTAC CTGCATGTCT GCATAATCAT AACTGACTAA  
TTTTGGAACA GCTGGTAATT ATTTGAGCTT TACTGAAAT TTTTCATGAG GCCAATTCTA CCCTACTGAA CTCAAAATTTG  
AGTTAATGAT GACCTCATT TATTGCTGCT TTTAAGAAAA AAGATTTCCG AAGAGGAATG AATTCTTGTA TACTGTGGT  
AGGACTATGG GTTTTTTTTT GTTTGTTTGT TGTGTTTGTG ACGGAGTCTC ACCCTGTCAC CCAGGCTGGA GTGCAGTGGT  
GCGATCTCAG CTCACAGCAG CCAGGTTCAA GTGATTCTCC TTCCTCAGCC TCCCGAGTAG CTGAGATTAC AGGCACGTGC  
CACCATGCCC GGCTAATTTT TGTATCTTT AGTAGAGATG GTTTCACCAT GTTGGCCAGG CTGGTCTCGA ACTCCTGACC  
TCGTGATCCG CCGCCTCAG CCTCCCAAAG TGCTGGGACT ACAGGCGTGA GCCACCGTGC CCGCGCGGGT TATTCATTTT  
TCTTATTAAC ATCTTTGAT GATTCTTATG GTGTGTTTAC AGTAAACAT TTCTAACAAT TATTTAACA ATTATCTTG  
ATGGTGTATA TGAAGAAATTT ATTTGCTGTG ATTTGTAAGC TGCTATGTGC AGAAGAATTT CAGTCAATAA AAGTTGGTAA  
GATAGGTATG TAAGTAATAT GAAAAAAGAT AGAAGGTGAT GAGTGACTTA GGTATAAATT AAGTACAATA GAAATGTGA  
GGAAGAAAA ATTTCTTGTA ATAGAAATCG GAAGTACAAA CTGGGCATGG TGGTGTGCAT CTCTAATCCC AGCTCCTTGA  
GAGGCTGGTA TGGGAGGATC ACTTTAGCCC AGGAGCTTGA GGCTGCAGTG AGGTGTGATC ATGTACCAGC ACTCCATCCT  
GGGTGACAGC AAGACCGTCT CTCTTTTTT TTTTTTTGA GACGGAGTCT CGCCTATGCT GGAGTGCAAT GGCGCGATCT  
TGGCTCATG CAACCTCTGC CTCCCAGTT CAAGTGATTC TCCTGCTCA GCCTCCTGAG CAGCTGGGAT TACAGGTGTG  
CGCCACCATG CCCAGCTAAT TATTTTGTAT TTTAAGTAGA GACGGGTCTC CACCATACTG GCGAGGTGGT TCTTCACTC  
CTGACCTCTT GTTCGCCCC CTAGGTCTCC CAAAGTGCTG GGATTACAGG TGTGAGCCAC CCCACTTGGC CCCGAGCGAG  
ACCCTCTCTC TAAAAAATAA TAAATAAATA AATCATAAAC CTGTGGATTA TTGTAGCATT GTTCTCTATC TGTCAAAAA  
ATTTTCATGAC TATGCATAGT TTGAAAAGGC AAGTTTGTCC CTGGGCAATT TTCAAAATAT TCTTTAATG TGTTTTACA  
ATACTGTTA CTAATAAAT CTAAAGTTT TAAAAGCAA ATTAAGCCAG TAATTTGAGT CCAATTCCAA TCTCTTATGA  
GTCATTGCT AAATTTCAA AGGGTTTTT TTTTTTTT GGTGTTTCT GAGTAATGAA TACCCTATTA CTATGATACT  
AGTATCTTCC TTAATTATCC TACTCATGT CTCAACATTC TGACAGTTGG ATTGAGCATA TTCGTAAGTA AAATGTTTT  
AACTGTATGA TGTACTTTGA TGTAAAGGTC CGAGTCCCCA CATACTCGG TAGATGTGTT CTACAGTTT TGTATTCCT  
TGAAATGTAA CTGTTCTCTA TGTACAGCC TTTATAACCT TCAGTTACTT GAAATGAACA AATTCATTCA AATTCAGCA  
CTTAAAGTT TTAATTACA TTTTGGATAA ATACCAAAGT GTTTTGTGTA TGATGTATGT ATAAACAAAT TGTAATATT  
AAACGTTAGT TGTACGATT AGACCTATAT AAAACATGAT ATGCAGTCTA CTGAATAGCT ATCAGCCTCT AACATGTTA  
GTGTCATTA GAAAATGCTT TCTAAATTGC CAAAAGCTGA TTGTCTAGGT GATAACAAAT TTACCATTG GAGGAAGTTG  
ACTTTCTCAT TTTTCATGCT TCATCAGTCT TACTTGATGA GATTCATTCT TCTAGTCAGA AGAGAGTTTA GACTGCTCAG  
TTTACTCATA TTTTGAGTTA GCTTTTCTAT TTAGAGTTCA CTGGTTGTG GAATATTCAT TTATAATTG AATCTACGTT  
GTGTAATGGG ACCTAATTTT TTTTCTTT GTTTTTGTG GAGTCTCGTT TTGTACCCA GGTGGAGTG CAGTGGCGTG  
ATCTTTGCTC ACTGCAACCT CCACCTTCCA GGTTACAGGT ATTCTCTGC CTCAGTCTCC CAAGTAGCTG GGATTACAGG  
CATGCTTAC CACGCTGGC TAATTTTTGT ATTTTATGA GAGATGGGGT TTCACCATGT TGGCCAGGCT GGTCTCAAAA  
CTCCTGAGCT CAAGTGATCC TCCTGCCTG GCCTCCATAA GTGCTGGGAT TACAGGCGTG AGCCGCTGAG CCTGGCCCCA  
GAGTTGTTTT TGTTTTGTG TCAAGACAAG ATCTCAGCT ATTGCCAGG CTGGAGAGCA GTAGTGCGAT CATAGCTCAC  
TGCAGCCTGA ACTCCTGGGT TCAAGCTATT CTCTGCCTC CATCTTCTAA AGTGCTGTGA TTACAGGTCT GAGCCATGAT  
GCTTGGCCTG TGTTTTGTG TGTGTTTTT GGGGACAGG GTCTGCTTT GTCACCAAAA CTGGAGTGTA GTGGTGGCAA  
CATAGCTAGC TACTGCGAG CTCCATCTCC CAGCTCAAG CAATCTCTC ACCTCAGCCT TCCAAGTAGC TGAGACCGCA  
GGTGCGTGCT ACCATGCGTG GCTAATTTT TATTTATATA TTTATTTTT GGTAGACATG AGGTCTGTG ATGTTTCCA  
GGTGCTCTT AACTCCTGGG CTCAGACAGT CCTCCGCTC CAGCCACCA AAGTGTTGGG ATTACAGGCG TGAGCCACCA  
TGCGTGGCAT AATTTTTTT AAGTAAATTA TTTTTTATC TTGATATAG AAGTGATTCA TGTTCATTG GGAAATATG  
AAACATATAG AAAACAGAA AAGATTACAA AACATCTAAT CTGAAATGGT TAAGATTTT ATGAGAACAG TCTCATCTCA  
TTTCCGTATA TTCTGCCAG CCTATCCATC ATTCTTCGTA CATGTTTATC TACATTAATA TTGGTGTAT ATTTTGGAAA  
CTTTTTGTTT AACTACATTG TGAACATTTT TCATGTTTAA AAATGTCATT TTAATGATGG CAGATCTAT TCAATAGATG  
TACACACACC TATTTAACTG GTCCACAATT GTTGATATG TAGGTCGTTT CTTTCTCTC TTTTTTTTT TTTTGGCTA  
CTACTTAATA GTTCTCTGT ATAGAATGTG GTATTTGAA AGTGTATCAA GCTTTAGATT GGTAGTATTC TTGCATTTAA  
TAAAGGGCAG TGGCCTTTGT TGACTGACAT GACAATATTT TTATAAAAT TGTATTGTC TTTACAGAAA TTTGAAAAAT  
TATTGTAGAA ATGTTTTTAC CTCATATGAA CCACCTGACA TTGGAACAGA CTTTCTTTT ACAAGTGTTA CCAAAGGTAT  
AATACTATTA CCTGAAAAATA CATGTTATAA GGAATCTAGC CTCAGTCTTA GATGATTTAT TATTAATTAT GGCTCTCTT  
TTCTAATATA TCAATATAT TCAAAATAA AATAAGGAGT AAGTAGATCT CATGTGAGAC TATAATGGTG TTAGTGTGAT  
CATTAGGCAG TTAACAACTG TTACAGGCTG GGCACGGTGG CTCATGCTG TAATCCAGC TCTCTGAGAG GCTGAGGTGG  
GCAGATCATC TGAGGTCAGG AGTTCGAGAC CACCCATGGT CAACATGATG AAACCTCGTC TCTACTAAAA GTACAAAAAA  
TTAGTGGAC ATGGTGGCAG GTGCTGTAA TCCCACTGAC TTGGGAGACT GAGACAGGAG AATTGCTTGA CCCTGGGAGG  
CGGAGGTTGC ATTTAGTCAA GATCGTGCCA TTGCACTCCA GCCTGGGCAA TAAGAGCGAT GCTCCGTCTC AAAAAAAA  
AAAAAATAA AAGAACTTAT ATTTTCAGAT TGTGTGGTTC CTTTACTAAC TGAATTTAAA TTATTTGTAG TCAATTTAA  
ATGCTCTGT ATTTTAAAGC CACTGTACTC CAGCCTGGG GACAGAGTGA AACCTTAAT TCAAAAAA AAAAAAAA

AAGAAAAGCT GGAATATTGG CAAAATCAAG TAACTAAGAG AAAACATTAA ATTCACAGAA TACATTATTA CATTTTAGAT  
ATATATGGTA TATGTTTTCT CTGAAAAGCA CAAGCATACC TTTTTGTTT TAAATGGAGG GAACTAAAGA TACTTTGGTG  
CCAAAATGAA ACATTATTG TAATTAATCT CTTATTGAAA TGGGTTTCTA ACTTTAGCTT TGAATCGTAA TCTTCAAAT  
TTCTGTACT CATAGTCACT TGATGATTCT CTATCTGAAA TATTTCTTAG AATTGTCTT TGACCACCAG /AAAAAGATTC  
AACTGTGACA TAGATGAAAA TGGATGTTGA GTGTTAACAG GCCTATGGGA AACAGTATTT TCTTTAGCTA CATTGTATTG  
TTGACTGTGT TGCTATTCTT ATAATGTTTA GGTCAATTA ATTGTTAGAA AGATCCAAGT ATTAAGATCT AGGGTGGCTA  
ACTTTTCACA GACAAAAAGC TTGTTTGTA GGTCAATTA TATACCCTTA ATTCAGGAAG GTTAGCTTGA ATTGGGTCAA  
AAGGAAACTG GTTAGAAAAAT AAGTGAGTAG TGAATAGGCG ATTCAGTGCA AATTCCTTCC AGAAAAATACC CTTGTAAATG  
ACTGTATGAA TGTGGATTCT TCAAGACAGT CAAATTTATT GTGCGAAAGT AATACTTTTA TTTTTGCAT CTCTAAAAACA  
TGAACCTTGA GTGATTTTTT AAAAAAATTG ATGCTATTAA ATAGATTCAG ACCATAGAAA TGGAAAAATA ATTTCTGTTT  
GGGGCTTTTG GGGGGATTAT GTTGTAAGAAA TACCTTTTCT CTGTATTTTG TGCTTAATTA GGTACAATTG TTAAGCTAGA  
TGATAGCCTG TGGATGTTAC TAGTGCAAAA TCAAATTATC GTATTGTGTT TCTCTGTAA AGTTTTGTCT TGTCTTTCT  
AGTGATTCT CTTATTCCTG TTTATTACTT GATTTGTTTT TACAGACTGT GAAATTATTC GATGACATGA TGTATGAATT  
AACCAGTCAA GCCAGAGGAC TGTCAGGCA AAATTTGGAA ATCCAGACCA CTCTAAGGAA TATTTTACAA GTTAAGTCAAA  
TGTATTAGAA AGCAGGAGAG AGAGGGAGCT TAAAGAATGT CAAAATTTT ATACTGATAC TGATTAGCTA TGTATCTTA  
TGTAATGGCC TAATGTTGGA ATTAAATTTA TAGAATTAAG GACGTGAATA TAGAAACATG AATTCTGAAT AATAAATCT  
TATAAGAAGA GAAGTCATCA AGCTAGCTGA CCTACCTGT ATTTTCAAGG ATATGTGTGG AACACCTGCC ATGTGTTTTG  
AAGTTTGTGT TAGTATTCTA AATGGCTAGA CAGTTGTTC AGTATTTGTA GTTCTGATAG ACTAAAGTTC TGTGAAAAAGA  
GGAAGAGACT GTGTTTTGTT CATTGCTGTA TTTGTAGCAC CCAGACTGCT GACTAATACC TTTTCAGTGC ACAAANAATA  
TATTTAAGT GAAATTTCT TCCTTATCA CAGACAATGG TGCAGTCTT AGGAGCTCTC ACAGGATGTG TTAGCATAT  
CTGTGCCACA CAGGAATCCA TCATTTTGA AAATATTAC AGTCTCCCT CCTCAGTCT CATATAATT AAAAGCATAT  
TTGTGCATTG TAAGGTGAGT AAAGGTCTAA TTATACTTTG AATGGTATAT AATCAATGTG CATAGGGGCT GAGTAAAAATA  
ATGTTTGTAT AAGATTTTAC ATTTAGTCT ATATTATTGA AATAAACTTT TCCATAGAAT AAAGAACATG TAAGTAAATA  
ATGTTTGCAG AAAAAGTGGT TTTAAGGAAG TCATTAAAAG TGGCTTTTTG GGGTTTTTGA GTTTTATCTT ATTTCCCTC  
TATAAAGAAA GAAGTTTTAA GAATTTGTGT TGAGACAGAC ACAGGGATCC TGAAATAGTT ATGTCATGTT GCATTGACCA  
ATATTCAATT ACCATTATGA TTAGATGTCA GAATCTCTT TTATAAGGA AAGTTAATCC TTATTAGTC CATCTCTACA  
TGCCAGAGGT AGCCTTGAGG CACAAAAGCT TGCTATGAAT TTATGGGTCA CAGACAGTTT TAATATTGCT ATTTGTGGG  
CGAATGAAAA TCACTAGTTA ATTAATACCT CTCTTTGCTG ATAGGATGCT AAAAATGTCA CGCACCTGGC CTAATGTTAC  
CCTTTTTAG TTTGTATTT GCAAGATCAT GGAAGTCAGA AATAATATTT TATACATGCT TGCATCTCTT GAAGCACACT  
ATATTTAATG GATGTTCACT AAACAATGAA TGAATATGTG ATTCAGTAAA TTTATGATCT CTAATAGTAT GAATTAAGT  
AAATTTGGCT CTTGAGCTTT GATTTGTTTT TTCTCTCATT TTTATTTATC CGTAATCAGA ATAGTGAATC TGTGTATTCT  
GGGTGTTTAC ACCTAGTTTC AGACCTTCTC CAGGCTCTTT TCAAGGAGGC CTATTCTCTT CAAAAGCAGT TAATGGAAT  
GCTGGACATG GTTTGCATGG ACCCTTAGT AGATGCTAAT GATGATATT TGAATATGGT AATAGGTGAG TGAAGAAAAAC  
TTCTGCTTA GTATATGGTG ACTATAAATC ATGTATCAAT TAAAAATTGTC TCTAATGATT CATGTTATTT TCTTACTAAT  
TATGCATTAA AATTGATTGA AATCTTACCA AATAAATTTT TAATCTTGAA ATTTGGAATT TGTAAAATTT ATTTTGGGTA  
CCTTAACCTA GATTGCGTA TTAGTTACT GTAATTTCTC CACAATGATT AACTTATATA ACTTTATAAT CTCTGAGGTT  
GTCCATATTC AGAGACAATA ACTTTCACAT TTTTAAACC ATAACTGATA TTGAGATGCA GTTTATATTT CCTTCCAGAA  
TACATATAAA TACGTGCATA TGTGTATGTA AATATGCTA TTCTCATATA CATATTATAA TGAANAATCT CATTTTACAT  
GTGATGCACT TTATACTAGT TTATTTTTAT TTTATTTTAT TTTTITGAGA CAGAGTCTCA CTGTGTAGCC CAGCTGGAG  
TGCAGTGGCA CAATCTCGGC TCACTGCAAC CTCGCTCCC GGACTCAAGC GATTCTCTG CCTCAGCTC ATGAGTAGCT  
GGGATTATAG GCGTCCGCCA CCACACCTGG CTAATTTTTG TATTTTTAGT AGAGACAGG TTTACCGTG TTGGCCAGGC  
TGGTCTTGAA CTCCTGACCT CAGGTAATCC ACCTGCCTCA GCCTCCCAA GTGCTGGGAT TACAGGCATG AGCCACCGTG  
CCCAGCCAAT ACTAGTTTAT TTTAAAGAA TTGCTGGTCG TAACACACTT CATTGATTTT ATCACTCATT AATGGATTAT  
GAACAAGAGT TTGAAAAACA ATATAAAGGC AAAGTTTGCA TTCAAAACTT TGGTATAAAG AGAGTAAGTT GGTTTTGTGC  
AGTGTATCAG GCACCTGTTG CTCTGCAACA CACCACCTCA AAATCTATTT ATTCATATT TATTTATTCA TGATCTGTG  
AGTCTGCAGT TTAGGGTGGG ATGCTCTGAG ACAACTTCT CTAGTCCACC TGGGGCACTA GCTCACCCTAT GTGACTTCAG  
TGACTTCATT CACATCTGGC TGTGGGCAGA GGCAGAAGTA CTTGAGAAAG CCATGTGCAT CATCCAGCAG GTTACCCTA  
TCTCAGATAC CTGATGCCAG TGGTTTCAGG GTTCTAAGA GTAGCAAAAG TGTGAGCAGG TCGCTGTGTG CTAGCACTTT  
TCAAGTTTCT GCTTGCTTA ATTTTATAT TGTCCCCCG GCCACAGCAG GTCATAGCGT TTAGCCAGAG GTCATTGTAG  
AAAAGTGTGG ATTCACAAAG GGCAGTCATT GTGGCCATTT TTATAAATA TCTACCAGAG ACTGAGTAAA AGCCTTGCAT  
GAATACCATG GATATTAATT TGAATCTTC CTTTTAGAT TTTCTTCTT TAGCAATTTG TTTTGTCTT TTTGATTAGA  
ATTATATCTG TAGAATATTT CAGTTATAAT AGGTACAAC TTTTATTCCA CTGAACACTT TTAGTTTTAT TTAGGTCATC  
TGGTAGGTAT AAACCTCAGA AGTTAATATT CAATATTTAT AAAAACCATT AACAAGTGTG AACTTTAAAT AGTTTAAATA  
ATTTCTTTGA CACAACGTG TCCAAGTTGT GTTACGTATT TTAATTCAAT CAAATGTTGA AATTGTTTCA TAGATAGTTT  
TAATATAGG AGAAACTCAC CCCCATGACA TTGGATGTC TTAAGAGTTC TGTATCTTT CTTGTCAGTT ATTCATCTT  
TATTGGATAT CTGCTCTGTT ATTTCCAGTA TGGACCATGC ATTTTATGCC AATACTTGA AGTTTATAAT TAAGTAAGTT  
TGTTTGTAT TTTTACTTT TTAGAAAATG TTTCCATAT TCCCAATCT TAATTATTCA TGATCTTTA GATTCAGTTT  
AAAACATTTT GTGTGAATTT AATGTTCACT GATTCAGTCT GTGTGATACT CAGATATTCT ACATGTAGCT CTCAAGCCAA  
ATTGGACTTC TTTACCCTGT GGCCTCTAAA ATTAAGAAAA ATGTTCTTCC TAGTTAGCTA GTACTTCAGA AATAATGGGC  
CATGGGCCAG ACTAGAACTT AACCACTTT CTCTGTCTAC TGTGTTTAA CCAGCTATCA AGTATCCTAT TTCTAGGATT  
AGATAAATTG ATAACTATAA TTAAGACTGA ATATAATCTT TCCATTAGGT ACTTTAAGT TGTTCACACT TAATCCATT  
TGTACAGTAA TTTTAACTTT CTGAACTGA AGCATTTTAA AGGGTCACCA GGGATAGTGC CTGTAGCATT CATCAGATT  
TTAGGGGTGA GAGGAGATGT GGTGAGATG TAAAAATGGT TAAGAATATC TACTTTATAC ACATACATAA AACATTAAAG  
GTCAGGTGAT TTTCAAGTCT TAGGTACTTT TCTGTACTA CCAGGACATT AAGTGCCAT TCAGTGGTTA AGAGTGTG  
CTGGAGCTT TATCAGATGT GCTTAAATCC ATCTTGAAA TCAATTTACT CTCTGAGCC CTTGGGCTAT TTGGTTAATT  
TCTCTGAACG TTAGTTTGT CATCTGAAAA TGGAAATAAT AATAGCAACT TCTTGACAGG GTTATAGTGA GAATTGAGTT  
CATCACTGTG AAATGCTTAG AAATGTGCAT GACACATAGT TAATACTCAA GGAATTAGCC ACATCACTAT CATCACTCT  
GATTATCTTC CACTCTTACC CTCTTCCAGT TCATTTCTG CCCAGCAGAA TGATCTTTA AAAAGTAAAT CAGATCATGT  
TACTCTATTG CTTGAAGTCT ATCCCATTTG ATTAAGAATA ACAACCTAAT CCTCTGTGGA TGCTGCCTCC TTCACCAGCC

TGCTCATGC TGCTCTCCCT ACTCTTAGTT CCTCAAACAT ACCAAACTCT CCTGTCCCAG AGTCTTTTCG TGGTTTTTCC  
ATCTGCCTAG GATGCTTCTC TCTCTATT TGTGTACCTT GCTAACTCCT GCTTACTGTC TTTCAGTTCT CAGCTTAAGA  
GTATATCTT CATGATAACA TTCTTTGATA TCCTTACCCT AAGATTAAGT TAGATTGATA TCCTTACCCT AAGAATAAGT  
TAGATTAGGT CTCTCTATTG TAGCACCTTA GACTCTGTCA TTGACAAAT CACAGCCCTA ATTAATTATT CTAAAAATTA  
TTTAACATT CTCTCATGC TAGACCACAA GTTTCATGCA GGTAAAGCGG AGATTGTGTC CATTTGTTTG ACCCCTTTGT  
CTCCAGGGCC TGGTAGAATG CCTCATACAT AGTAAGAATT CAATTAATAT TTTACACAGA GAAAAAATTA GCAACTTATT  
TAAACAAATA TAACTGCTTC AGAGGTAAAC TGGGCACATC TTAGTTATAT TATGTGATAT ATGATGCTTT TTGATTGTTT  
TTTTAAATGT TCTACAAGGT AGATATTGTT AGAGGTCTTA AGTTACTTGA TGTGTTACTT GTGGTGATTG TATTCTTTTC  
TTTTATTCA TTAGGCAGA GCCTTAAGCA CCAGTCCATA ATAAAAAGCC AGTTGAAACA CAAAGATATA ATTACTAGCT  
TGTGTGAAGA CATTCTTTTC TCCTTCCATT CTGTTTACA GTTAGCTGAG CAGATGACAC AGTCAGATGC ACAGGTAATA  
TTTGGGCTAA TAGCATTTTA AACAGCAACT CTATTTTCT TGGGCAGTTA GTAAATCTCA TTGAAATGTC TGGGTGAGTC  
TATTTAAGAG GATTTTAATT TATTTTCTTT TGGGATTCTG TGGGATTATT TATATCCCAT AATTACTTTT  
CACCCAGAGC ATTGTATTAG ATTCTAACT GCTGTCTATT CCTCTGGGGT CTGCCTGGCT CCTCTTTGCT TTGGTAAGTC  
GTGGTCACA GCATTCTTCT CAGAATCCTT TCATTCTTT CTGCATGAGA AAAAAAATTC TTTTGTTCAT ATTTGTATAA  
GATCTGATAT AGCTGCAATC AATCTTGCA TTTTCTTCA CCAACGCATT GCGACCTTTA GGGATACAAG TATGTTTGTG  
CATGTATATG TATGTATCAG TCTTTTAAAT TTGATATAGT CATACTTTG TTTTATTIT GAAAAGTTAG AGTGTGTAAT  
TGGTATCCCA TTTATGAAAC ATTATATTCT AAAAATTTGT AGTACGATTA TTGGGAATTA TAATCATT TTCTGTAACA  
CTGTATACA TAGTACCTTT TGCTTTCAGA CTAGCCCTCA ATTTTATTTA ACTATAGTAG TCCTAAATTA TAAGATTAAT  
AGTACTCAGG ACCTAACAGT TATATGTCAT TTGTTTTTTT TTTTITTAG AGTGGCTCTC ACTCTGTAC CCAAGCTGGA  
GTGCAGTGGT ATGACCTTGG CTCACTGCAG CCTCTGCCTC ACGGGTTCAA GGGATCGTTC TGCCTTAGCC TCCTGAGTAG  
CTGGGATTAT AGGCGCTGC CACCACGCCT GGCTAATTTT TTTAGTAGAG ACGGGGTTTC GCCATGTTGG CCAGGCTGGT  
CTCGAATCC TGACCTCAGG TGGTCCACCC GCCTTGGCCT CCCAAAGTGC TGGGATTACA GGTGTGAGCC ACCGCGCCCA  
GCCTATGTG AATAATTTTA ATGGGACCAT GAATTGAATA TTTCTTCTT GAATAGCAAT GACATAGCCC CTCTATTGT  
ACATCTGCAA GCTGATACAG GGAATTCCTT TGACTCTGC CTCTTCCCT CCAGTCAGCT ATGGGGGTGA AAGTGTAGGG  
GTTTATCCAA GTCCTAAAC TGGTAGCAAC TCCTAGGCA GGGCTAGTCT GGAAGGACAG ACCCTAGGGG AGGGTGAAC  
TTAAAAAGA AGTTCTGAAG GTAGTAAGAA GGAAATGAGG AGTAGTGTTA GGAAGGGGCT AACTTTTTTC TTCTTGCTTC  
TCTTCTTAT CTCACCTGCC CTTCCCTTG TATCCTTCT TCCTTTTTCC CTTCCTTTT TTGCTCTCAC TTCATTCTG  
CATCTTTCT GATTCTCTT ACCTTGCTAA AAGGAGAAGT TTGTTTGGGT ATCCTATATC AATGGCAGGA AGGTGTTTT  
CTTCTTACC TTTATCTAT AGATTCTAT TCTCAACACC AACCTCTCC TTTTTCAGTT TCCTTCTTG TTCTCTGAC  
ACCACAGAGT TTGCAGTAG TACTTGGAGA GGAATTTAA ACAGAGATAC TTGGACCAAG AGTAAGATGA AGAAAGTCTA  
AACAACAGTA TAGTCTATAG TGGCAAGAGA GAGTATGGGG GCTGCTTAGC CAGGGTGGCT GTACATAAAG TATATCTCA  
GTTTATATA ACTGCTTATA GATGGAAATC AGAAAAATTA AATCTCTTA ACTGTCCAAG AAAATTCTCA TTTTTCAAAA  
TTTGGGACTG ATAAATGTGA CCAGTTCTGC TTAGTGTCCA TTGCTGAAA TGGAGCTTTG AGGTGGACTG TATAATTTCT  
TCAATCTTAA CTCCAAATTC TGATCAGCGA CGCCTCTGC TGTCACTAT TAATATTAT TACCAATCA AAGTAAAGTA  
TTGAAGTTT CTGCGCAGT TCACTTTGT GTTTAGTCC ATTTAGGCTG CTATAACAA ATCCCTTAA CTGGGTAAGG  
GATTATAAT ATTAGAAAT TATCTCTAC AGTTCTGGA GCTGGGAAGC CCAATATCAA GGCACCAAG GATTGGTGT  
CTAACGAGGG TGTGCCGTCT GCTTCAAAAA TGCCCTCTG TGTCTGCATC CTCACTAGT GCAAGGGGCA AGACGCTCC  
CTTCAACCTC TTTTATAAGG GCACTTATGT CATTCTAGG GGCAGAGCCC TCATGACTTA ATCACTTCCC CAAAGGCCCC  
ACCTCTAAT AGTATCAGAT TGGGTGTTAG GTGTCTGGGA GGACACCAAT CTTCAAGCCA TATCATCTCA CTTGGAAAAA  
AGTCAAAATA AAACCAGTAG ATTTAATTA TATTACCTA TTTATAGAAG CATGTGATGT ATCACTCTT GTATTAAAT  
CTGGGGTTG CCGTAACAAG TTACCACAAA CTAGGTGGCT TAAACAATA GAATTTTATT CTCTCAGATT TCTAGAGGCA  
GAAGTTTACA GTGTGTCAT AGGGCCATGT TCTTGGAG GCTTGGGG AGAATATATT TCATATCTT CTCTTAGCTT  
CTCGGTGTC CTGGCAATCC TTAGCTTACT TTGCTTTCT GTGTCTTAC ATCATCTTT TATAAGAAAC CAGTTGATAG  
TGATTAAGGG CATACCTTAC TTTAATATGA CCTCATCTTA ACTAATTATG TCTTCAATAA CCTATTTC AAATAAGGCC  
ACATTCTGAA GTATTGGGAG TTAGAACTTA AAGCTTTTG GAGGGGACAC AGTTCAACCC ATAACAACCC CTAATTCGA  
TATTTATTCT CAATTAAGTC TTGAAATTGG TTTCAAAAAG AGAATATTCT ATTAGAGTT TTAATGTATA GTTTAACAT  
ATAGTTCTT AGCCCCAAT TTTTTTTTT TTTTTTTTT TTTTTTTTT TTTTGGAGC GGAGTCTCGC TCTGTGCCCC  
AGGCCGACT CGGACTGCA GTGGCGCAAT CTGGCTCAC TGCAAGCTCC GCTTCCGGG TTACAGCCAT TCCCTGCTC  
CAGCCTCCG AGTAGTGGG ACTACAGCGC CTGCCACCG CGCCCGCTA ATTTTITGT ATTTTITAGT GACAGGGGT  
TTCACCTGT TAGCCAGGAT GGTCTCGATC TCCTGACCTC ATGATCCACC CGCCTCGGCC TCCCAAAGTG CTGGGATTAC  
AGGCGTGAGC CACGCGGCC GGCCTGCCCC CAATTATTTA GTTTTCTAT AAACAGGGAA ATTTATTGT GTGGCCCTTA  
GAACTAATT AATTTCCACT CTAATTCCTA CTTATGTTA TATAATGCTT TTAGAAATTT GTATTATCA GAAATAAAC  
ATATACTATT GTATCTGTTG CCTACACTTA GATTTTATTG CTGCTATAT TAAATTTTA TTAGTATTTT AATTGTTTTA  
TTAAAGAAAG AATGTGCTG TAATCTCAGC ACTTTGAGA GGCCAAGGCA GAAGGATTGC TTGAGCCGAC GATTTGAGA  
CCAGACTGAG CAACACAGGG AGACCCCAT CTCTACAAAA AATAAAAAAA TCTCCAGGC CTATGGGAC ATACCTGTAG  
TTCTAGTTAC TTGGGAGACT GGGGTGGGAG GATGCATTGA GCCCAGGAGA TTGAGGCTGC AGTGAGCCAT GATCAGGCCA  
CTGTACTCCA GCTTGGACAA CAGAGTGAGA GCTTGTCTAG ATAGATAGAT AGATAGATAA TCTAAATAGA TAATAGACAG  
ATTATCTAAA TAGATAATAG ACAGATTATC TAAATAGATA ATAGACAGAT TATCTAAATA GATAATAGAC AGATTATCTA  
AATAGATAAT AGACAGATTA TCTAAATAGA TAATAGACAG ATTATCTATC TAAATAGATA ATAGATTATC TAAATAGATA  
ATAGATAGAT AGATTAGATA GATAGATAGA TAGATAGAGC TTGGACAACA GAGTGAGAGC CTGTCTAGAT AGATAGAAAC  
AAAGAAAGAA AGAAAGAAATG GTGCTCATAT TTTAAAGCAT GTAAAAATGG TCTTCTTGT TTATATTACC CACACTTCT  
TTGTTGGCAT TAAGATGCAA ACTTTGTTT AAACAGTTGA GTAAATCAA GATGGGACTG TTAAGTTATT TGTGTTATTT  
ACCTGCTTTT TGAAATGTA AAAATAAAAC TCTAGGTTTA ATTAGTAGTA TGCTATTTAG TAATGAAGTA AAGCTAGAGG  
CTTCAACAA ATCTTGTGTA ATTTCTCTT GAATGAGAGA GAAATTTAA AGTAAGCAA CAAATAAGTT GTGTGTCACC  
ACTCATTCTG TCATTAAACA AGTATTTCCA GAGTACTTAT TCTGTGCCAG GAAATGTTGT AGGTGCCCTC AACAACTTAG  
AGTCTAGCTG GAGACACAAG TAAGTAGGTA ATTATTATG AATGGTATGA TCTTTGGAGG ACTGGGTATT GGCTGGCTCA  
TGGGAGTACA AGATAGGTAC CCAGTAGTGA AGTCAGGAAA GGTTCCTTAT GGTGATATGA TGACGTCTAT GCTGATTATA  
AGGTCACTGT AGAATAAACT TTGTGCTTT AAATTTGCA AGCACTGTAT TAGAGAGTTT ACTTCAAA TAATCGAAAA  
GGCTGAGTGT GGTGACCCAT GGCTGTAATC CCAGCACTTT GGGAGGCCA GGTGGGCGA TTGCTTAGC TAGGAGTTCC

AGACCAGGCT GGCCAACATG GTGAAACCCC GTCTCTACTA AAAATACAAA AATTAGCCAG GAGTGATGGT GCGCACCTGT  
AATGCCAGCT ACTTGGGAGG CTGAGGCAGG AGGATCACTT GAACCCAGGA GGTGGAGGTT GAAGTAAGCC GAGGTCATGC  
CACTGCACTC CAGCCTGGGC AACAGAGTGA GACTCCATCT CAAAAAATAA AAAATGATC AAAGAAAGGT GAATTTTCAT  
CTACCCTATT TCTGCTGAGG AAAATGGACT ATTTTCAAAT ATTTTAAATA AGGGTCAAAA TGAGGGGATC GCCACCATGG  
AAACCCTTTG CCTCAGGGCA TCCTTTTGGC TGGCACTGGT TGGATGTGTA ATCAGTGATA ATCCTGAGAG ATACAGCACA  
AATCTAAGCA ATTCATGTGA TGATTTACAC ACTTTTCGTG GCACAGAGCT CAGCTTCCTG GTTACCACCT ATCAACCCAC  
TAATTTGGTC CTACCCAGCA ATGGCTCAAT GCACAACTAT TGCCACAGC AGACTAAAAT TACTTCAGCT TTCAAATACA  
TTAACTGTG GATATCTTGT ACTATTTTCA TCGTGGGAAT GGTGGGGAAT GCAACTCTGC TCAGGATCAT TTACCAGAAC  
AAATGTATGA GGAATGGCCC CAACGCGCTG ATAGCCAGTC TTGCCCTTGG AGACCTTATC TATGTGGTCA TTGATCTCCC  
TATCAATGTA TTTAAGCTGC TGGCTGGGCG CTGGCCTTTT GATCACAATG ACTTTGGCGT ATTTCTTTGC AAGCTGTTCC  
CCTTTTGGCA GAAGTCTCTG GTGGGGATCA CCGTCTCAA CCTCTGCGCT CTTAGTGTG ACAGGTACAG AGCAGTTGCC  
TCCTGGAGTC GTGTTACGGG AATTGGGATT CCTTTGGTAA CTGCCATTGA AATTGCTCC ATCTGGATCC TGTCCTTTAT  
CCTGGCCATT CTGAAGCGA TTGGCTTCGT CATGGTACCC TTTGAATATA GGGGTGGACA GCATAAAACC TGTATGCTCA  
ATGCCACATC AAAATTCATG GAGTCTACC AAGATGTAAA GGACTGGTGG CTCTTCGGGT TCTATTTCTG TATGCCCTTG  
GTGTGCACTG CGATCTTCTA CACCCTCATG ACTGGTGAGA TGTGAACAG AAGGAATGGC AGCTTGAGAA TTGCCCTCAG  
TGAACATCTT AAGCAGCGTC GAGAAGTGGC AAAAACAGTT TTCTGCTTGG TTGAATTTT TGCTCTTTGC TGGTCCCTC  
TTCATTTAAG CCGTATATTG AAGAAAACCTG TGTATAACGA GATGGACAAG AACCAGATGT AATTACTTAG TTTCTTACTG  
CTCATGGATT ACATCGGTAT TAACCTGGCA ACCATGAATT CATGTATAAA CCCCATAGCT CTGATTTTGG TGAGCAAGAA  
ATTTAAAAAT TGTTTCCAGT CATGCCTCTG CTGCTGCTGT TACCAGTCCA AAAGTCTGAT GACCTCGGTC CCCATGAACG  
GAACAAGCAT CCAGTGAAG AACCACGATC AAAACAACCA CAACACAGAC CGGAGCAGCC ATAAGGACAG CATGAAGTGA  
CCACCCTTAG AAGCACTCT

-3' (FRAG. NO: 1738) (SEQ. ID NO: 1749)

5'-GCCACCATGG AAACCCCTTG CCTCAGGGCA TCCTTTTGGC TGGCACTGGT TGGATGTGTA ATCAGTGATA ATCCTGAGAG  
ATACAGCACA AATCTAAGCA ATCATGTGA TGATTTACAC ACTTTTCGTG GCACAGAGCT CAGCTTCCTG GTTACCACCT  
ATCAACCCAC TAATTTGGTC CTACCCAGCA ATGGCTCAAT GCACAACTAT TGCCACAGC AGACTAAAAT TACTTCAGCT  
TTCAAATACA TTAACACTGT GATATCTTGT ACTATTTTCA TCGTGGGAAT GGTGGGGAAT GCAACTCTGC TCAGGATCAT  
TTACCAGAAC AAATGTATGA GGAATGGCCC CAACGCGCTG ATAGCCAGTC TTGCCCTTGG AGACCTTATC TATGTGGTCA  
TTGATCTCCC TATCAATGTA TTTAAGCTGC TGGCTGGGCG CTGGCCTTTT GATCACAATG ACTTTGGCGT ATTTCTTTGC  
AAGCTGTTCC CCTTTTGGCA GAAGTCTCTG GTGGGGATCA CCGTCTCAA CCTCTGCGCT CTTAGTGTG ACAGGTACAG  
AGCGATTGCC TCCTGGAGTC GTGTTACGGG AATTGGGATT CCTTTGGTAA CTGCCATTGA AATTGCTCC ATCTGGATCC  
TGTCCTTTAT CCTGGCCATT CTGAAGCGA TTGGCTTCGT CATGGTACCC TTTGAATATA GGGGTGGACA GCATAAAACC  
TGTATGCTCA ATGCCACATC AAAATTCATG GAGTCTACC AAGATGTAAA GGACTGGTGG CTCTTCGGGT TCTATTTCTG  
TATGCCCTTG GTGTGCACTG CGATCTTCTA CACCCTCATG ACTGGTGAGA TGTGAACAG AAGGAATGGC AGCTTGAGAA  
TTGCCCTCAG TGAACATCTT AAGCAGCGTC GAGAAGTGGC AAAAACAGTT TTCTGCTTGG TTGAATTTT TGCTCTTTGC  
TGGTCCCTC TTCATTTAAG CCGTATATTG AAGAAAACCTG TGTATAACGA GATGGACAAG AACCAGATGT AATTACTTAG  
TTCTTACTG CTATGGATT ACATCGGTAT TAACCTGGCA ACCATGAATT CATGTATAAA CCCCATAGCT CTGATTTTGG  
TGAGCAAGAA ATTTAAAAAT TGTTTCCAGT CATGCCTCTG CTGCTGCTGT TACCAGTCCA AAAGTCTGAT GACCTCGGTC  
CCCATGAACG GAACAAGCAT CCAGTGAAG AACCACGATC AAAACAACCA CAACACAGAC CGGAGCAGCC ATAAGGACAG  
CATGAAGTGA CCACCCTTAG AAGCACTCT-3' (FRAG. NO: ) (SEQ. ID NO: 2481)

5'-GATCAAAATT TTTACCTATT ATGCATTGA TATATAATA AGTATATAAA TGCACACACA GACACAGCAA TGATGGTGAA  
CAGCTTCAT ACAATTATAT GGATGAATCT CATAAAATGC TGAGTTAAAG AAATCAGACC AAAGAACATA TACTGAAAGA  
TTCTCTCTAT ATACAAAGTT CAAAAATAGG TGGACCAATT CATGGTGGT TTAGAAATCA GAAGAGAGGC TACCTTTGTG  
GGGAGGGGAC AGTTAATGC CCAGAAGCGG TAAATAAGGA ATCCTCTGGG GAGTGGTAAT GATCTGGATG CTGGCTACAG  
GATGTGTTGG TTGTAATAAT GCATTTTTT ATATCTAGCT TTTCCATGT GTATATTATA CTTCAAAGAA GTTCAGTTAA  
TAATTTCTCA TGTCAGTGA GAGTAGTCA GTTAGCCCA GCAAGCCTCT GGCTTAATCT TGTTTACCT TAAGCCATCA  
GTATTTTACA AGTAGGAAA TTCACAGGGA AAGTTAGCT ATAAAATCCA GAATGAAGGT TTAGGTGGA GTTACTCTCT  
CATTTTCCAA AGCCCGTTTA TTTCTTGATT CCAGTTCTTA AGAAGTCTCA GCATTGTGTC TTTTTCATGT ATCTTACAAG  
AAGACAGCAT GTGCTTCTAA CACCTGATAC ATTGTATCTA CCAGCACTTG GTAAACAGAA AAGAACCACA TTTTCTTGT  
AGGAGAAAT TGGTGCTAT TTCCTACCAG GCACAAATAA GTGGGACCAA TAGGTGGGAT TAAAGATACA GTAGAAAGTA  
TTTAAACCT TGGAGGGG AATAGTCTGA AAATAAGTAA ATTTGGTCTA TAGAATGGA GTTACAGGCT TCTTCTTTT  
TTCCACAAG ATCTGCTCT TGAGCCCTA GAGACTTTT TGCTGTGTTA TGTTTCTTCA TTCTCATCT GCAGAGCCAG  
CCCTGAGAAG TGCAGACCA AGCCAGGGAA GGCTCTGCAA AGATGTACAA ATGGAAGTCA CCTTAATAAC CTCTGACTGC  
TGCGCATAAT ACATTTCACT CAAAAGAGGG GTTAAACAAT GGAACAGAAT ACAGAGGCCA GAAATAATGC TGAACACTGA  
CAACCATCTG ATCTTTGACA AAATCCACA AAACAAGCAA TGGAGAAAGG ACTCCCTATT CCATAAGGT GCTGGGATAA  
CTGTCTAGCT ATATACAGAA GATTGAACCT GGGCCCTTC CTTACATCAT ATACAAAAA TAACTAAGA TGGAGTAAAG  
ACTTAAATCT AAAACCAAAC ACTATAAAAA CCTGGAAGA TAGCCTGGGA AATACCATT TGGACATAGG ACCTGGCAAA  
GACTTCATGA CAAGACACCA AAAGCAATAG CAACAAAAAC CAAATTGACT AATGAAACTA ATGAAACTCT TTAGTTGTAC  
AACAGATAGT TTATCTGTAC AACAAAAATA ACTATCAACA GAGTAAACAA CCTACAGAAT GGAATAATTT TTTGCAACT  
ATGCATCTGA CAAAGGTCTA ATATCCAGAA TCTATAAGGA ATTTAAACAA ATTTACAAGC AAAAAAATGA CCTTATAA  
AAGTGGGCAA AGGACATGAA CAGATGCTTT TCAAAATAAG ACATTCACAC ATCCAACAAC CATATGAAAA GATGTTTAAAC  
ATCACTAATC ATTAGAGGAA TACAAATCAA AAGCATAATA AGATACCATC TAATACCAGT AGGAATGACT ACTATTAATA  
AGTCAGACAA TAACAGATGC TGGTGAAGGT TGTGGAGAAA AGGGAATGTT TATGCACTGC TAGTGGGAAT GTAAACTAGT  
TCAGCCATTG TGAAGAGAG TGTGGTGATT CTTCAAAGAA TGTAAACCG AACTGCCCTT TACATCAGCA ATCCCATAT  
TGGATATACA CAAAAGGAA TAGAAATTGT TTTACCGTAA AGGCGCATGC ATGCATATGT TCATTACAGC ACTATTTACG  
ATAGCAAGA CATGGAATCG TCTAAATGCC CATCAGTGGT AGACTAGCTA AAAAAAATAA AATGTGGTAC ATATACATCA  
CAGAATAGTA TGCAGCCATA AAAATGAACA AGATCATCAT GTCCCTTGGCA GCAACATGGA TGATGTTGGA GGCCATTATC  
CTAAGCAAA TAATGACGGA ACAGAAAGCC AAATACCACA TGTCTCATT TATAAGTGAC AGCTAAATAT TGAGTACACA  
TGGACACAAA GAAGGGAACA ATAGCATGG GACCTACTG AGAATAGAG GTGGAGGAG GGTGAGGATC  
AAAAAGTACC CATAGGACAC TGTGCTTATT ACCTGGGTGA TGAAATAATT TGCACACCA ACCCCTGTGA CACACAATT  
ACCTATATAG AAAACCTGTG CATGTACCCC TGAACCTAAA AGTTAATGTT GGGGGGGTGG GGTAAAGCTA CTTTGTGTA  
TAAATCTGAG CATTCAATTT AAAATAAAAT ATTTACCTCA TTAGAGTAAT TAACATTTAT TAAGCAAGA GCCAAGTACC

TTACACACAT GATGTTTAAT CTCACAATGA TCTTTAATCT CATAACAACC GTCCATTGTA TGTACATATG TGGAAATGGA  
GCCTTGGAGA GATTAAATGC ATGGGGCATG CCATTGACT AGAACTGGA AGCATCAGGA TTTAACTCA GTTCTGAATG  
GTTTTGAGG CTGTGTTTT TCCACATTAT AGCATGGCT GCCATGAAGA ACAGGTCCT TCTGGTGTG GTCTGTGTG  
GTTTAAGTGA AGCAAAATATT TATTTAAATA TTCAAGATAT GCTGTAAAT TTTTACTCAA AAATTTGAGT ACAGTATGGA  
TCTTCTGAAG CCAAATAACT CTTATTCAAT GCTTAGTTGA GAAATTTTAT GGAGTAGTTC TCAATTTTGA TGTAGTTCCA  
CTGCAAAGGT AAGTCTTATG GAAAGATTCA CTGTAATTTT TTTTCTCAT TTGGACATCA GCTTTTTCTT TTCCTCAGAC  
CCGCTGAAAG ATAATTTTTA AAATAAAAAA CTTGTTTTTA TATCAAGTGG GGACATTTTT TCCAAATGAA AACCGTGTAT  
TCATTTTATA TGATAAAATC AATGTTATTA TTTTAAAT TTTGATTTAA AAATCATTAA AAATAAATTT TCAGATATTA  
CCTGAAATTC TACCATCCAG AGATAATAGT GCTTAAAGAT TTGATATATA GACACACACA CATATATACA TATATATCAT  
CCTAAACTTC TTTGTATAAA TGTATATAAA GTTTTAAATA AAACTAGGA GATTAATGCC CTTTGAATGA AAATAAATAC  
AATGTGTATG CTTTAACATC TTGCCCTTAC TTTATAACAT TTATCACAGC AGTCATGAGA TAATGATTTA CATGGTCAAT  
GTTAGTAAAG TAATAGCTAA GTGCATGAAC TCTGGAGCTA GCCTCCCTGG ATTTTAATCC CAGATCTGTC ACTGACCAGC  
TGAGCAATAC TAGGTAAAT GCTCTTGTTC CTTAGTTCT TCATCTGTAA AATAGAGATA AAAATAATAT CCACCTCATA  
GGATTGGTGT GAGCATTAAA TGAGCATACG TATGTAGGCC ACTTAACAAC AATGCCTTCA CATACTGAAC ACAAATATAC  
GAGCTGTGT CTTATTGGGC TCATGTTTTT CCTACCATA AGCCGCATGC ATGCAAGGAC CATGTTGGTT TGTGCCACA  
TTGCATCCCC AACCTGGTAT ACAGTGTGCA TTCAATAGTT GTTGACTATT ATTACTAGT GCATTTAACA AATATCTGTT  
AAATGAGTGA AGAAATACCC ATTTACTGCA AGTTAGTCTA ATTTGATGG CATAAATGGG GAAACTGGA CTTGGAGTC  
AAACAGGTTT TAAAACCTTA TTCCCTCATC CTCAGTTATT GACGTTTTT TTTTGGCAGG TGTGTGTGTG GGACAACCTTA  
TTGAACTTTT CTGAATTTCC AGCTTCGCAT ATATAAAATA GAGATAGTGA TTCATTCTTG CAATGTATGG ATTTGAGACA  
ATTGTGAAG TTTATCAATA AATAGTAGCT ATTTTGTAT AAGTATTACA TATAATATCC AGGCCACTGG TTTGCATAAC  
CCAAAGGGG ACCCATTCAT GCAGAATACA ACATAAATGG TGCCCTGGA GCAGTGCAGT ATAGGAACCC TGAGGGGACC  
TACAGTATAC TTTATAGTTC ATAGATTACA AATTATCCCT TTATCAGAGT CTCTCAAGGT TGGATGTATT TGAGGTCCAT  
AAGAGCAATT TAGGATTAAC AGTAGCTGCA GAAACCATCT GCAGTGATAT TCTCATTTTA AATCCGCGGG AAAGAAGACA  
GCTATAAAT TGGGACCTGG GTTTAAGCAT TTTAAATGCC AAGTTCACCA TTTTCTAAA CACAACAAAT ACCCAGTGAG  
AGAGGAGGAA GGGAAAGTAAA TGCTCTGAA TAAGCTAGTA AATGTCAGTA GTTGTACTGT ATGCATATTG ATGAACAATA  
GAGGAACCAA TGTCATCA GATGAGCAGG ATATTGGCA ATAACAAGTT GCCTTTGAGG AAAAATGATT TCTTTGGCAA  
GTTCTTTATC AGCATTACAA AGCTAAAAGC TACGCTTATC ATCACTTATA CTAGCATACC CTGTTGTGCA AATGCTGTCT  
GTGTTTGCAT CTGCTATTGT TGATGCCTGG TGCATGAATC AGGACTCCAG CCCACAAGTT TTCCAGAAC TTTCTTATGG  
CCATCATCTT TAAGTGTCTG GTGAAGCTC ATAGTTTGGT ACACAAAAGG GTCAACCTGG GGGATGGTA GGGTTTGAAT  
CAGTCGTTAC ATTTCAATAG AGCAGGAAGG GGAAATGGTG CCCTGTAAAC TCAGGGAATT TGCCAGTTG GTCCACCCCA  
CTCTCTCTCT CTTGCTCTGA GGAAGTGGCA CAGCTAGAA CAGCACCACA GGTGAGAGAA ATGCAAACCC TAACCAGAGA  
AGCAGACTCT TTGCCAGTAG TAATAGTTCA GGACCACCAC CAGCTTTTAT TAAAATTTTT AATAACACTC AAGTATTGGC  
AGAAAGAAAT AATCTTGGGT TAACATAAAC TAGAATATTG ACTCTTCTC TGTGGAAGAA TCAGCCAATC ACATTTGTTT  
ACATCAGTTC CCTGAAGAA GAAAAATACA GTGATTTGCG AATGAGTACA ATTTAAGCTA GATGTAAATA ACTTCTTTA  
GCCTGTAATG CTAGGCTAAT TACATATTGG AACTATTTTT TCAGGGAAGA ATTTGTAGG GTTTCAGGGA AGAATTCTGA  
AGAAATATA GAGCTGAAAT GATCTTGCA GCTACTGAAA CTGCAGGGT TAGATCCACA CTGATACTCG TTCTATTATC  
ACTGTAATGA AGCTGATGG AATAAGTAAA AATGTTTTGT ATTAGTATGT TTTTACACTT ATTTGCAAGG CATAAATAGG  
TTAGGTTTTG ATCTTAATTT AATTCTAACA TGTATTGTG ACAAGCTGTG AGCAGTTTTT AGGAGTTAGG TACTGGCCA  
TGACTGATTT TTAGGAGTT AATCATCTGG TAGAAGGGTC ATACACAATA GGAAGATGTG TGTGACAGGT TGTGATCATT  
ACTATAATCA CACAGAGAGC TGTAGAATTT TAGGCTGGCA GGTGGGCTCA CGCTGTAAT CCCAGCACTT TGGGAGGCCA  
AGGCAGGCGG ATCAAGAGGT CAGGAGATGG AGACCATCTT GGCTAACACG GTGAAACCCC GTCTGTACTA AAAATACAAA  
AAAAAAAAAA AGCCAGGCGT GGTGGTGGGC GCCTGTAGTC CAGCAACTT GGGAGGCTGA GGCAGGAGAA TGGCGTGAAC  
CCGGGAGGTG GAGCTTGCA GAGCCGAGA TCGCATCACT GCAATCCAAC CTGGGCGACA GAGGGAGACT CAGTCTCAAA  
AAAAAAAAAA AAAAAAAGTC ATGTTAGATC CAGAGGGGTA GCAACTGGGG CTGGGCTGTC AGTCAACTCA GTCAACTCAG  
TCAACTCTG TCCCCACAG GAGATGCCAG TGATGCATTT TCATGGCCAA CATTGTGAGT CAGCATATT GAATTACTCC  
TGATTATAGA GACACAGCTG CAAACGATTC CCCATTAAGT ATGATGTGTT TTGCAATGTT TGAAGGTAC TCTTTTTAG  
TAAGGGAAT CCCCTCTCT GGCTTGCTGA AAGTTTTTTC TTTCCATTTT AAAAATCGTG AATTCCTTTT TGCAATATTG  
AGGTGTTAT ATGGTTTCTC TTCTCTAATC TGTTAATATG GTGATTTAAT GGTAGAAAT TTTCTAATGT AAATCCACT  
CATATTGAG AAATAAACCT AAACAGGCA TGAGGCTATA TTTTTTATTT GCTTCTATAT TTGGTTGCTA TACAGTATTA  
TGTTAAGAT TTGTTACAT ATATTGTGA ATGAGTTGG ACTATTTTTT CTTCTGCGG ATTTTATCT GGTTTTTAAA  
TTAAGGATAT TTAGACTTA TGAAATATTT GGCAACAAT CCTTGGCAAG TAATTTTTTG GGAATTTGT TTTGGCTATT  
TTGAGTATTA CCAATATAT TTTAATTAAG TTATCTTAA TGTTTTCTTA ATTAAAAAA TTACTACTC TAGAGATATT  
CTTATGTTT TCCAGATTT GTCTATTTAT ACCACTTTTC TTTTCTCTC GATGAGTGT ATAGATGTT ATCTATTTTT  
TTATCTTCT TGATCTTCTC TTTCTATTAA CTCTGAAGT TTATTATTTT CTTTTTCCA CTTCCTTATG  
GTTTATCTT TCAATTTTT TCTAACTTCT TAAGTTGGGT GTTTAATTTT TAGCTTGCT TGTCTTTTGA GGATAAGCAT  
TAAACTACA AATTTTCTT GTTATCTTT TGCTGACCC CAAATTGTTG ATATTCTAT TGTCTAATT CTATTCAATT  
AGAATACTT AAAGTTTCT TTTGGTTTTT AAAAACTAAC TTTTAAATTT GACAAATAAA AATTGTGTAT ATTTATTGTG  
CACAGCATAT GGCTTTGAAA TATATGTACA TTGTGGAATG GCTAAATTTA GCTTATTAAT GTATGCATTA TCTCATATC  
TTATCATTTT TTGTGGTGAG AGCTATGTGA CTTTGAATG TATGATTTAT TTAATATTT TTAATTTAT AAGCATATTG  
GGATTTTAAG TAATTTACCT TTTTATTAT AACTATAAC AAGTAGAACA GTTAACCTGT ATGATTCTAC ATCATTGAAA  
TTTATTGACA TTTGCTTCAT AGTCTATTAT ATGGTCTACT TTTGTTTATG TTACATCTGT AGTAGAATGT GCTAATAGTT  
GAGTAAAGTA CACATATGTC TATGAAATCA AGTGAATCC AGAGAAAAAG AGAAATTTAC TGAATATATT GTTCTAGGTG  
CTATTATATG TTGTCATGTT TAATCTCTAC CACAATTTGA TGAGGAGCC ATAATTAAT CCACCTTACA CATGAGGAGC  
CTGAGGGTTA AAAAAAAGC TAGCTCTACT ATTTGTAAAG AATGAAGCAA AGATACAAAT GAAGGCCAC ATATCTTATA  
ACTAGATATT TAAGCATTTT AATCAAGCT TTAACACTGC TAAATAAAT GTGCTCCAAT TTCTATATTG ACAGACATAC  
CTTCTAATG AGCTGGGGT CGAATTTAGA AATCTTTGAT GCTTCAGAGT CCACACTGAA ATGTGGAGGC ACATAGTGAG  
TTGGTCCCCA GCCTTCAGTC CACCCACCTT CTTTACTA ATACACTTTT CACATACATG TATGAACACC CCAGCTCCA  
AGTCCAAACC CTAAACAAA TGGGACACCC TTGTGCATAC ACAGAGACAC AGCCCATCCT CAGGAAAAACC TGGAAAAAGTC  
CATACAAGTT CTGGAAGCAA GCTTGGGACG GTTTCAGTAG TGTGGTCTAT AAGGGAGGCC TCAGAAGACA GGTTTTCTTA  
ATTCTGTGAA CTCTCCAC AGTAGAAAGG GTGCTGGAG AGGGTCAGAG TGAGGACTTC TAAAGCATGG GTCCTGAGTA  
GGGGCACTC TTGCCCCAAGT CTAAGAAGG TACTAGAATA GCACACTACT ACTAGTACT AGAAGCCAGA TACAAGACA  
GGTCTTCTGA AATTAATAAT AATAATAACT ATTACCATA TTATACCAGT AGCTGTCTATT TATTATTGTC TATTATTG  
CCAGTCACTG TTCTAAATTC TTTACATGTA TTATACAAC GCCATATAAC TGCCATATGA GGGATGTACC CTCATTGTCA  
CCATTTTACC GATGAGAAAA CTGGCATAAA ACGTTAAGT AACTTGTCCA AGTTACAGAG CTTAGTGAAG CCACAATGTT  
GCTCAATTTG CTCTCAAACT TCAAAGGAG GGAAGGACA CTAAGTCAT AGAGTCTTTA AGAATCAGAG CTAGAAGGAA  
TCTTAGATGT TATCTAGTCA GCCTCCCTCC ATTACAGTCC AAGAGAAGAT GGCCCTGAGT TACTTGTAGC TATTTTGGCA



TGTGAATTGC AAGTGAATAT ACATTCTACT GAAGATAAAA GATATTTAAA GATATCGCTG GATATAGGAA CAGTGGTTTT  
AAATCTCTAG GCTTTAACTT TTCTCAGAAC AAGAAATCCT TTTTGGTTTT AATCTATATG CACATCTGTA TTTTCTCAA  
TTATCGGGTA GTAAAAATATA ACTTTTCTTC TGTAATATTT TTTAACTTTA ATGAGTGTTC CTCATAATAG AAAAGTTTGG  
AAACCAATTGC TATGGGTATA TACTTTCTAA AGGGATAGTA ATTTCTCTAG AATATTCTCA TAATGCTCCA GAAGTAATTA  
GCACAATTGT GCAAGTCTGT GCATCATCAA CTATACATTC TGCTGTGTTA CTCCAAATCC ACATGAAACT GATTATACAG  
TCAAAGGCGA GCCCAGTGGA GAGGCATTTT TGGAGACTTC CTGGTACATT GAGACAGGGT CGGCCAGTCT GCGTTAGGGT  
CTTGGTCAAA ACTGCATTTT TGAACATAA CTCAGATTGC TTCTTTTAA GGGGTCAGAA CTGATTCAA TCTACATTTT  
TAAAGGCCCT AGATGTGGGG CTTTCTCTAT TCCCAGTCTC CGCTATTGGT CTTTGTGAAT CCACAGGCAA TTGGCCACA  
TCCTTGACTC TCTCTTATAT TAAGAATTAA ACAGCTAAGT TCATGCAGAG GAAATATAAC AAAGGAGGGA TTCTCTACA  
AGATCTTTGA AAAATGGAAC ATTTGCATAA GTCATATTTA GCCAGAAGT TGTGTTTATA TTTTCTTTC TGAATACITT  
GTTACACCTC CTCCAGGCA ACCCCCCCCC TCCCTGACCC CAATAGTCA GAGACCAAAG CCTTCACAA GGTTTACACT  
TGAACCTTCC TGGCCCCACC CTCATCATCA CGCTGAATA ATTACATTTA CTGACTGTTC TCCCCTGCTT CCGTTTATCT  
CCACTCTTAA ACCCTCTGAC ACCTTAATCT TCCAGAAATA CCATTGTGAT CCGTTTCCAC TCTTGCTCAA GTTTTCCAG  
AAACTAGAGT ACAAACCTTA TAAGCTTTAG AGTTGAAAGC CACTCTATCT CTTTTTCATC CCCAGGTCTC TGCCAAGGCA  
GTATAACCTG TCCAACATCT CTAACITCAA TACCTTTGTC TTAGATACTA GACTCTCTC CTGTTTCTA ATTAACCTG  
ATCTAGGACT TAATTTTGGC TCTGAATTCT GTTGCCCTT GCCAAGTGAT CTCTTCTCTC TCTGAGCCGC AGCATCTCTG  
AGCTTGACAT CTTAGCATAG CCATAGCACA CACAGCCTTA CGTTGCAGTT CAGGGGTGTT ACCTTCCCTC CCTTCCAGA  
TGCTGGATCC CCAGGGATAG GAACTCTGCC CTTATGTGTC CATAGCCCTT GGTAGTATGT CTTGCAGTCG TACATTTTCA  
GCAAAATGTTT AATTGGTTAA TTGAAGACAA CTGTCCCATG CCTTAAGCCT CTCTTTTTCG TAAACATGCC TGTGTCTTT  
GTCATTGAAC AACTATTTTG ATCTATTTTC TTCTTGACAT AGGGGTGAGT TCCGAGGATG CTGAAATCAA GAGACATAGC  
TTATCTCTC AAAATTGCTT TCAAGAGTGA TTTTGTGTA AATTGGAAC CTTTGGCTA TTTTGGACT ACCCACTTCA  
GCAAGAGTGT TTGAAACCAA ATCTATTCTA AGTAATTTT TATTCCTTT TCTCTATGGC ATTAGACACA CAGCTCTTTT  
AAACTACCTT TCGTTATCTA TTAACAGAC ATTCAGTAAC TCTATAGACA CTGTCTAGCT ATATGAACCT AGACAACTA  
ATATCTCTGA GCTTCAGTTT CTAAAAATTT AAAATGAGGA CAATACCATC TATGGCCGGG GATTAATGCT TATGAGGAAT  
GTAAACAGCA TGTTCAGTAC CATCTCTCTA AAATGAGAT AAAATGAAAT AAAAATACCT GCCGCAACTG CTTCTAAGA  
GTTCTCAAAA TTCTCAGAGA GCTTAATTTT CATGCTCACC ATAGCACCGA TTTTCTCTA AATATTTTGT TTCTACAAA  
ATATTTTGT CCAATTTTGC CTTTATGGC TATTTCTTCA TATCCACTTT CCCAACTAA AGAAGCAGCC CCTTCACCTT  
AAACTCTCTC TTCAAAGCAA CCTAAATACA GGTCTGGGT TGTATTCCTA GTGGGATGTT ACAGAGGTTA GTGTGATGCA  
GAGGAGGAGT GATCTGTTT AAATCCATAC TAGTCCCCAG AGGCCAGGCT GCTTCTGCCA CCCCTACCC TCCGCCACA  
GAGCTCTTCA GCTTCTCACA TTCTAGTTTC TTCTCTCTCT ACTTTCATTA CTTCTCTCT TTTTCTTTT CTCTCATGT  
GCTCACGGGA GCAGAGAAAA TTAACCTCTC TAAGTTTCT TAACACAGAG TGCCTTAAT ACATATTACT ATTGTTTGAG  
TTCTGCCAA CACTACGCT GTAGGGTCAC ACCTGCTATA TTAGAGGCT ATCAAAAAA GATAGCTTTC TCCTAAAAAG  
GGATTTGGAT GCCTACTAAG ATAACCTGAT GCCAAGATAA GTTAACTTA ACAAACCTTA TTATTATTAT TATTATTAT  
ATTAGAGATA GGTACTTATT CTGTACCCCA GACTCGAGTG CAGGGATGCA ATAATAGCTC ATGACAGCT CAAGTCTCTG  
AGTTCATGCA ATCCTTCTGC TTCAGCTCCC TGAGTAGCTA GGACTACAGG CATATGCTAC TCTGCCAGC TACTTTTAAA  
AAAATAATTA GGGATGGGGT CTTGTTGTAT TGCCAGGCT CGTCTCAAAC TTCTGGTTTC AAGCAATCCT CCGCTCTTT  
ACCTCCCTAA TTGTTGGAGT TACAGGCATG AGCCACAGCA CTCAACCAG ATTTAAAAA TTTTAAAGA AATCACAATA  
CTTACTGTTA TCATCATTAT GGTACTACC AGTGTAAAAA CAATTGGTAT TGAAAACACC ACTACAGAT CAAGTCTCAA  
ACCAAGATGT CAAGTAAATA TTATTGTCAG ACCTCTGAGC CCAAGCCTGC AGGTATACAC CCAGATGGCC TGAAGCAAGT  
GAAGAATCAC AAAAGAACTG AAAATGGCCG GTTCTGCTT TAACCTGATGA CATTCCACCA TTGTGATTG TTCTGCCCC  
ACCTTGACAT AGGGATTAAC CTTGTGAAAT TCCTTCCCTT GGCTCAGAA GCTCCCGACT GAGTACCTTG TGACCCCCAC  
CCCTGCCAC AAGTGAAGAAA CCCCTTTGA CTGTAATTTT CCACTACCA CCCAAATCCT ATAAACAGC CTCACCTCA  
TCTCCCTCG CTGACTCTCT TTTCAGACTC AACCTGCCTG CACCTAGGTG ATTCAAAAGC TTTATTGCTC ACACAAAGCC  
TGTTTGGTGG TCTCTTACA CAGACCATGT GACATTTGGT GCCGTAATC AGATCGGGGA ACCTCCCTTG GGAGATCAGT  
CCCCTGTCAAT CCGTCTCTTT GCTCCATGAG AAAGATCCAC CTATGACCTC TGGTCTCAG ACCAACCAG CCAAGGAACA  
TCTAACCAAT TTAAATTTGG GTAAGTGGCC TCTTTTACT CTCTTCTCA GCCTCTCTCA CTATCCCTCA ACATCTTCT  
CCTTTCAATC TTGGCACCAC GCTTCAATCT CTCCCTTCCC TTAATTTTCTG TTCTTTTCT TTTCTGGTAG AGACAGAGGA  
AACGTGTTCT ATCTGTGAAC CCAAACCTCC AGCACTGGTC ATGGACTTGG AAAGACAGTC TTCCCTTGAT GTTTAATCAC  
TGCAGGGATG CCGCTGCTGAT TATTCACCCA CATTTCAGAG CTGTCTGATC ACTGCAGGGA CGCCTGCTC GATCTTTCAC  
CTTAGTGGCA AGTACCATT TGCCTGGGTG GCAAGCACA CTTCTCTG GGGGCAAGCA CCACCTCTCC TGGGGGCCAA  
GTACCCCCA ACCCTTCTC TCCATGTCTC CACCTCTCT TCTCTGGGT TGCCTCTTC ACTATGGGCC ACCCTCCACC  
CTCCATCTCT CCCCTTCTC CTTAGCCTG TGTCTCAAG AACTTAAAC CTCTCAACT CACGTCTGAC CTAACCTTA  
AATGCCTTAC TTTCTCTGC AATACCGCTT GACCCCAATA CAAACTCAAC AATGGTTCCA AATAGCCTGA AAACGGCAT  
TTCAATTTCT CCATCCACA AGATCTAAT AATCTTGTG GTAAATGGA CAAATGGTCT GAGGTGCTCT ACATCTGGC  
ATTCTTTTAC AGCTCGGTCC CTCCCTAGTC TCTGTCCCA ATGCAATCA TCCCAAAATC TCCCTCTTTC CCTCTGCT  
GTCCCTCAG TCCCAACCCC AAGTGTGCT GAGTCTTCC AATCTTCTT TTCTACTGAC CCATCTGACC TCTCCCTCT  
TCCCGAGACT GCTCTCTCTC AGGTGCTCTC CCGCCAGGCT GAATCAGGCT CCAATCTCTC CTCAGCGTCC GCTCTCCAC  
CCTATAATCC TTCTATACC TCCCTCTCTC ACACCTGGTC CAGCTTACAG TTTTATTCTG TGACTAGGCC TCCCCACCT  
GCCCAACAAT TTCTCTTAA AGAGGTGGCT GGAGCTAAAG GCATAGTCAA GGTAAATGCT CTTTCTTCT TATCCAACCT  
CTCCCATCTC AGTTAGTATT TAGGCTTTT TTCTATCAAT ATGAATACCT AGCCCACTCC ATGGCTCATT TGGCAGCAAC  
TCCTAGACAT TTACAGCCT TGGACCCAGA GGGGCCAGAA GGTCACTTAA TTCTCAATAT GCATTTTATT ACCCAATCCA  
CTCCCAACAT TAGAAAAAGC TCCAAAAAGT AGACTCCGGC CCTCAAAACC CACAACAGGA CTTAATTAAC CTTGCCCTCA  
AAGCGTACAA TAATAGAGTA GAGGCAGCCA AGTAGACA TAATTCTGAG TTGCAATTTCT TTGCCTCAC GTTGAGAGAA  
ACCCAGCCA CATCTCCAGT ACACAAGAAC TTCAAAATGC CTAAGCCACA GTGGTCAAGC ATTCCTACAG GACCTCTCC  
ATCAGGATCT TGCTTCAAGT GCCAGAAATC TGGCCACTGG GCCAAGGAAT GCCCTCAGCC TGGGATTCTC CTAAGCCAT  
GTTCCATCTG TGTGGGACCC CACTGGAAT CCGACTGTCC AACTTGCCCA GCACCCACTC CCAGAGCCCC TGGAACTCTG  
GCCCAAGGCT CTCTGACTGA CTCTTCCCA GATCTTCTTG CTTAGTGGC TGAAGACTGA TGCTGCTGA TCGCTCAGA  
AGCCTCTGG ACCATCACAG ATGCTTTTGG TAACCTTATC AGTTGAGGGT AAGTCCGTCC CTTCTTAAT TAATCGAGAG  
GCTACCCACT CCACATTACC TTCTCTTCAA GGTCTGTTT CCCTTGTCTT CATAAATGTT GTGGGTATTG ATGGCCAGGC  
TTCTAAACCC CTTAAACCTC CCAACTCTG GTGCCGATT AAACAACATT CTTTATACA CTCTTTTITA GTTATCCCCA  
CCTGCCAGCT TCCCTTATA GGCTGAGACA TTTTAAACAA ATTTTGTCT TCCTGACTA TTCTGGACT ACAGCCACAT  
CTCATTTGCT CCCTTCTTCC CAACCCAAAA GTGGCAACTC TTGTGCCACT TCCTCTCATA TCCCTTACC TAAACCCACA  
GGTATGGGAC ACCTTACTC CCTCCCTGGC AACAATCAC ACCCTCATTA CTATCCCAT AAAACCTAAT CACCTTACC  
TGGGTCAACG CCAGTATCCC ATCCCAACAG AGGCTTAAA GGGATTAAAG CCTGTTATCA CTGCTGTT ACAACATGTC  
CTTTAAAGC CTGTAACTC TCCTTACAAT TCCCCATTT TACCTGTCCA AAAACTGGAC ATGCCTTACA GGTAGTTCA  
GGATCTGTGC CTTATCAACC AAATTGTCTT GCCTATCCAC GCCATGGTGC CAAACCCATA TACTCTCTA TCCTCAATAC



CTCCCTCCAA AACCCCTCCA TAACCCTTAT TCTGTTCTGG ATCTCAAAAC ATGCTTTCTT TACTATTTCAT TTGACCCTT  
CATCCAGGCC TCTCTTCACT TTCATTGGA CTGACCCTGA CACCCATCAG CCTCAGCAAC TTACCTGGGC TGTACTGCCG  
CAAGGCTTCA TGGACAGCCC CCATTACCTC AGTCAACCCA AATTTCTTCT TCATCCATTA CCTATCCAGG CATAGTTCTT  
CATGAAAAACA CAGTGCTCT CCCTGCTGAT CATGTCCAGC TAATCTCCCC AACCCAGGA CTGGCAAAT GACTTTACTC  
ACATGCCCA AATCAGGACA CTAAGTACC TCTTGGTCTG GTTAGACACT TTCATTGGAT AGGTAGATGC CTITCCCACA  
GGGCCTAAGA AGGCCACCGT GGTCAATTTCT TCCCTTCTGT CAGACATAAT TCCTTGGTTT GGCCTTCCCA CCTCTATACA  
GTCTGATAAT GGACAAGCCT TTAGTAGTCA AAGCAGGCAA GCAGTTTCTC AGGCTCTTGG TATTGAGTGA AACCTTCATA  
CCCCTTACCG TCCTCAATCC TTAGGAAAGG TAGAATGAT TAATGGTCTT TAAAAACAC ACCTCACCAA GCTCAGCCTC  
CAACTTAAAA AGGACTGGAC AGTACTTTTA CCACCTGCCA TTCTCAGAAT TCGGGCCTGT CCTCGAAATG CTACAAGGTA  
CAGCCCATTT AAGATTCTGT ATGGACGCTC CTTTTTATTA GGCCCCAGTC TCATTCCAGA CACCAGCCCA ACTTGAAGTG  
TGCCCCAAAA ACTTGTCACT CCTACAATCT TCTGTCTAGT CATACTCCTA TTCACCATTG TCAACTACTT GTAAATGCCC  
TGCCCTTTT TACAGTGCTG ATTTATACTT TTCTCCAAA CCATCATAAC TGATATCTCT TGGTTTTACC TCAAAACCGCC  
ACCCTTAAGT CTCTCTTAAA GTGGATAGAA GATCTTCAGT GACAAGGTAC ACTCCAATAC TTCCACCTTA ATAAAGCCCT  
ATTCTTTACT TTTATATTCA CTCTTATTCT TGTTCCTATT CTTATGCCAC TCTCTACCTC TCCCAGCTA TCTCCACCAC  
ACTATCAATC TCACTCACTC TCTCCTAGCC ATTTCTAATC CTCTTTAAC AAACAATTGC TGGCTTTACA ATTTCTCTTT  
CTCCAAAAAT CACCGAGTCC TCAATTTACT CACTGCTAAA AAAGGGGACT CTGCAATTTT TTAATGAAG AGTGTGTGTT  
TTACCTAAAT CAATCTGGCC TGGTATATGA CAACATAAAA AAAACCTAAG GATAGAGCCA AAAACCTTGC CAACCAAGCA  
AGTAATTATG CTGAACCCCC TTGGGCACTC TAATTAGATG TCCTGGGTTT TCCCGATTCT TAATCTTTA ATACCTGTTT  
TTCTCTTCT CTATGCGAGA CTTGTGTCT TCATTTAGT TTCTCAATTC ATACAAAACC GTATCCAGGC CATCCCAAT  
CATTCTATAC GACAAATGTT TTAAGGGAGG AGACCACCCC TCATATTGTC TTATGCCCAA TTTCTGCCTC CAAAGAAAGA  
AGTAAAAATG AAAAGGCAGA AATGAAATCC ACAGGCAGAC AGCCTGATGC CACACCCTGG GCCTGGTGGT TAAGATCAAC  
CCCTGACCTA ATCAGTTATG TTATCTATAG ATTACAGACA TTGTATGAA AAGCACTGG AAAACTCTG TTTGTCTCTG  
TTCTCTAAT TACCAGTACA CGCAGCCCCT AGTCATGTAC CCCCTGCTTG CTCCCCCTGC TTGCTCAATC AGTCATGACC  
CTCTCAGCA GACCCCTTA GAGTTGTAAG CCCTTAAGAG GAAAAGGAAT TGTTCACCTG GAGAGCTCGG TTTTGTAGAC  
ATGAGTCTTG CCAATGCTCC CAGCTGAATG AAGCCCTCC TTTCTTAACT CAGTGTCTGA GGGGTTTTGT CTGTGCTTGT  
TCCTGCTACA GTTTCATCTA ACAACCCCAT ATTTTACCCC CTTACCACAA AATCTTCTCT CAGCTTAACT TCTCCACTC  
TAGGTTCTCA CGCCACCCCT AATCCTGCTC GAAGCAGCCC TGAGAAACAT CGCCCGTTAT CTCTCCACAC CACCCCAAAA  
AATTTTCACT GCCCAACAC TTTACCACTA TTTCTGTTTA TTTTCTTAT TAATATAAGA AGATAGAAAT GTCAGGCCTC  
TGAGCCCAAG CCTGCACGTA TACATCCACA TGGCCTGAAG CAAGTGAAGA ATCACAAAAG AAGTGAATAT GGCTGGTTC  
TGCCCTAACT GATGATATT CACCATTGTG ATTTGTCTCT GCGGCACTT GACTGAGGGA TTAACCTTGT GAACCTTCTT  
CCCTGGCTC AGAAGCTCCC CCACTGAGCA CTTGTGACC CCCACCCCTA CCCACAAGTG AAAAACCCCT TTTGACTGTA  
ATTTTCACT ACCACCCAA ATCCTATAAA ACAGCCCCAC CCCATCTCCC TTTGCTGACT CTATTTTGG ACTCAGCCCA  
CTGCACCCA GGTGATTCAA AAGCTTCATT GCTCACACAA AGCCTGTTTG GTGGTCTCTT CACACCGACA CGCGGTATAA  
TTATTATATT ACTTTTAACT AAAACCTTT CAGAGTCTCG CAGGGAAGGC TGTATATATC TCATAAAGAT TGGGGGCCCA  
CTGGATCAGA CAAGGCCACA AAGGCCAAAG GGAAGTAAAG ATCTCATTAT TTCTCCTAAT AATTTCCCTG TCCTTTGTCA  
TAAATGGTGG GTAGGCTGTT ATGGTGATGG CAGATTTTCT TTCCATAAAA TGTCCATAAT AGGACATTG AACAGAAGGG  
AAAAATCAA TTGCTGAAGT TGAAGAGGG CAATGCAAAG AACTTTGGAG AAAGAAGTGT ACAGAGAAGT CAACGTGCAG  
ATGGGAGGAA GTTTAAGGG AAAAATATAG ATGTCTAAG AATACATTTA TTCATTTTCC ACAGTGCAAT TGGACAAGA  
AGCCTCTTTC TTGCTTCTT CTATTCTCAT TAAATCATT GAGCTCAAGC AATCCTCTG CCTCAGCTTC CCGACTAGCT  
AGGACTACAG GTATGTGCTA CTATGCCAG CTAATTTTTT AAAAATTAGA TTTAATTG GTGAATATT TCTGTAGGAA  
ACTACAATA TACAGCCAG GCACATTGAT CTGGGTGAA CAAATCAGAA GGAATGAATA ATTCTGTGT CCTGGGACTC  
TGACAAATTC ATGAACTTGG TACTCTGAGT AAAGCTAGG AGGAGTTATT TCATAAAATG TGGAGCACA TCATGTGACA  
AAGATAATGG GATCCCCATT TCATAAATA ATCTGAAGT CAGAGAGAGT AACAAGTGGC CAGGGTCACA TCACGGAGAC  
AGAGGCAGGG TTCCCACTGA TGCTCTGAC TCCTGTCCC AGGCCCTTC TCCTCCGCA AGCAGAAGTG CAGGGGCGAG  
AGCTGACCCT GTGCAGTGA AATCTGAGGG CTGAGTTCTT ATTGGAACAC AAGTGAAGA CTCTCTGCT TCTAATCTCA  
GGATAAGGAC TCAGAGCTCC ATCTGTCCA GCCTTAGGAT AAGAACAGCA ATCTTACACC ATGAAAGCAT GAAAGGTAAG  
ATTTGAGTGA GGAATAAATA AAAAAGGTC TGTGTTTCAG ATTCAGTTCA CAAAGCAGTT TCATCTTAA GTTACCATCA  
CAATAACCT GTGGGGTAAG CAAGGCAAAT TTCTTCTG TTTTATGGGC ATAGGAAGTA AGTCTCAGG AGGTTAAGAC  
CAAGGTTTCT GGAGAATTTT ATATTATGAA TCTTGATTA TGGGATTACT ATTATGTAAT TCCTAAGATC ATATAGGAAT  
CCTAGAGCTT GATATAGAA CTTTATTTT AAATCTAT ATCATATA TACAAGGAGT AGTGTCCATT TGGGTTCTCT  
GGCCCTGATG TGTAGTGA ATAAACATTT TTGTCAGGT TGCATGTGT GTCTGTGCAC GTGTGCACTG TACACCTCCA  
GGGGATGTAC CTTAAACCAC ATGAATGTGA TTTGCACATC CAAGATTAC AGTGTACTAT AGGGAGAATC TTTTGAACA  
GCTTTTCTA TAATACAGAA TCTGAGATGT CTTTGAGAAA GAAAAGTGA ATCATTACCA AAAAATTATT CTCATAATGT  
GTGCAAAAT GTATGAAATC TATATTGGCC ATGGGACAAG GAGGTATTTC CAGCTAGCTT CTGAAAGGGC TCTATTCTCT  
CATAAGAAT CAGCTGTTGA CATTAGGTGA TATCTGCCA GGTACATAGA TGCCATAGAG AAAGAGGGT TGGTGAATCT  
TATATCAGCA GTGCACTGTA TGCTCTTCT GATTTATTG AACATTCAAT TATTGAGTGT CAAGTAATGC ACTAGATACT  
CCAGGGATCT GACACAAACT CTGCCCTGAA GGAGCATGTA ATCTCACTGG GGAGAAAACA AAACATATGA TAATTTCAAA  
ATAAAACT AGGCAACT GTTAACACT AAAAGCAGG CTTTATTCAA ATGCAAAAT GCATGTTACA GGGTAACCTT  
TCAGTAAGAA GCCAGGAAGA GGAGCTCATC ATGGGTTGGA TTAGTAAAGG ACTAGTTATA AAAGAAGTGG TGGGTTGAG  
GGAGGCCTGA GATGAAATTT AAAGAATATG TAGAATCTAG GTAAGTGGAT AAAAGGTCTG GGGGAGGGG AAAGGAGAGC  
ATTTCAATGT GAATCAAGGA ATTTCTCCAC CTGTTTAAAC TCTTCCATAT GACATCAAG AGATGTCACT TGCAGCTAGC  
ATTTCACTGA TGTCTTCTA CTAATAATAT CGTGAATAA GAAACATTGA CTATAAGAAA TAGGAATGGG TCTCATAAAA  
GGAAACAGCA AAACCCCAA ACTAAAAAAC AGCGCAGGCT ATTTCTCTCT TCTCTCTT TGTGGGAC TCATGATG  
CTAGGTGTGG AAGTCAGCCA ACTGAAAAAG AGAGGTGGCT GAAGAAGGTG GGGAGGCTGA AGCCAGTTAA ATAGGATGGT  
CCAATTACA GACGGCGAGG CTACAGTGCA AATAGGACTC TTTCAACTTG AGCAGGACCC CATTACTTCA CTGGAGTTAG  
AAAGAAAGGA GAGCGTAGAC TTTTGAATCT TTCTATAAGA GTGTACCTCC ACAGTATACA GAAGACGAGC TGAATTTGA  
TCTGCAAGAA AACTGAGTCC ATATTACAT ATGTATCAAA TTTGCACTTC ATTTAGAAGT GTCTGTCTC AAGTACAGCA  
CTGAATTGAA ACTGAAAAACA AGAGTCAAGA AAGAGCAAAG TCAGCACTCT TTATATTCCA CATGAATCT TCCCTTTAT  
GCTCTTATTT GTTCTCTCTC AGAAAAGACA AAAAGCTGAG CTGTATAAAC ACCTGTGGGC TGGGGGTTGA GGGATAATG  
AGGGGCGAAA TGAAGCTGA AGGAACTGTT GGTGAGGTAG AAATCTTCCC AGATGCACTG AAGGAAACAC ACTTCATGTT  
TGACAGGTA GGTGCCACA CACAAACGT TCTATGGAAG GATTTAAAGG ATCTCATGAT TTTTAGTATT CCAAGAATTT  
TCTTTACCA AGGGCGATTT AATATGGGTC ATTCATGAGT AAAGAAAAAC AAAAGATAAT AAGAGTTTAA AAATTGCAAA  
ACTTGGAGTG TTAGTAGTAA AGGTAATAT TCATTAGAGA TGAGAAGAGG AGCAAGGAAA TGCTTTCAGC TGGAAATCTC  
AGACAAGAGG CCAGGCTTTA GGAACCTCTG AAGATGAACA AATGTAAGCA AACCTAGTA GCAGCACTTC TCAGATTTTC  
ATGTGCTTAC CACTCAGAGA TGGTGTAAA ATGCAGACTC TGATTGAGTA GGTCTGAGTG GAGCCTGAGA TTCTGCACCC  
CTAACAAGCT CTTTAGTGAT GCTTATGCCA CTGGCGACA GACCCCACTT GGAGAAATTT TGTGGTGCA TACGGTCTTT

GTCTCCAGAT CTAATGAGTC TGAAGGACAG TGTAGATTGA TTTTAAAT TTATGTTTAT TTTAATTTAA TTTAATTTAA  
TTTATTTATT TATTTATTTT TGAGATGGAG TCTACTCTG TTGCCAGTC CGGAGTGCAG TGGCACGGAG GCAGCTCATG  
CAACCACGGC CTCCTGGGT CAAGCGATTG TTCCGCTCA ACTTCTGAG TAGCTGGGAA TACAGGCAG TGGCAGCACA  
CCCAGCTAAT TTTGTATT TTAGTAGAGA TGGGGTTTCA CCACATTGGC CAAGCTAATC TCAAACCTCT GACCTCATGA  
TCCACCTGCC ACGGCTCCG AAAGTGCCTGG GATTACAGGC GTGAGCCACC GAGGCCAGCT GTAGATTGAT TTTGAGCAGT  
GGAAAGTCAA GGAATTAGAA GGCATGCTTA AATGGAAAGT GAAATTGGAG AAAATTTAAA CTCATGAAAT AGTGGTGGTT  
ATAAACTCGT GATAAATTA ATCCTGGGAT ATAATTAAAT GAGATGGTAA CACATTAGT TAAAGAAAT AAGTGACACT  
TTTTTGTGT GACACAACCTG TCTTATCTT GGAAGGACA AGGAGAGAAT GAAATATGTT ATGTCTTCAC AGCACCTTTC  
AAAGGGAGAA CCAGATTCTG AGGAGCTGGT CTCATGATGA ACTGTGAGG TAAACCACAG TTCAGCAGCT GCAAATGTGC  
TTGCCAAAAT AGAGACAAAA AAATGTTTCT GAAAAAATAA TTTCACATAT GCCCTCCTCT GAGGTGGGA TCATATCTTC  
CTGTGTATCT TGGGTGTAGC TTCTATCTG CCAGAATTTA GACAGTAGAA ACCAAATGAG GTGATAAACA GAGTCATTTT  
GCAGAAGAGT CAAAATAACC CAGCAAGAAA TGAACCACA AATGCCAAG GAGTCATTA TTCACCATTC AAAAGCTAAT  
AGAAATGAAC ACAAACTACT ATGAAATTC ACCCAAGAAC TAAAAAATAA AAAAAAGGC TCATGGTGT TAGTGTGATA  
GTATTCATTT TACCTTTGAC TTGTTCTAAA AACACACCAT ACTTCTACC CACCCTTCT CAGTGCCTG ACACAATGGT  
TTCAGTGTGA AAAAAAATC CACGTTACTG GAAAAGGAGG GTGCTGGGA CTGCCCCTC TAAGCTGGTA GTCAAGGGTC  
TTGAGTTCTA AAAGCATACG CGTTAAGAGC ATGATTCCTG GATCCAAATG AGTATGGATC TCAGCATTGC CATTATTGT  
GACCTCAGGC TATTTATTT CTCTGTGCT GTTCTTTT CAGTAATGAA GATGTTCTA GACCTTCTC CCACAGACTT  
AAAGGCATAT TTCTGATTT AAGACATGTA AACCAATTCAT AACAGTATAC AACATGGAAT TAATATTGTA TAAAGGTTTA  
TGATTATTGT AACTAACTCT GTCATTGCT CAAGGCCTAT AGAAAACTTA CTTAATTAGT TCAACTACAA AAAAGTTTG  
AATGTGATAT CCACCAAGAT CATATTCAGA CCTAGAATTC TGTGATTCTT ATGAATTAAT ACAGCCTGG TCAATAAATG  
AGAGCTGGGC AAATAATCT TCTTGTCTAG GCCTTTCTAG ACCATCTGGT GAAGCATTCA AGACTTATGT TATTGGGGCC  
AGCCTTCTCT TCCAATCTCA ACTCCACAAC TCCTCAATAA GCCATGGGCT CAAGAAAGTT CTGCTCAGT GCCCTGAAA  
AATGCTTTCA TAGTCTCACT ACCATACCAC TGCTTACACA ATTCCTTCC TACAGACTGC CTCTCTTCC TGCTTTCTC  
CATATACCTA AATCTTATCT ATTCCTTATA AGCAACCTTC TTTATAACAT TTCTATAAC CACCAAGCCA AATGACCTTT  
TCCTTCTTAA ATATAGCACC CATTGGCCAT TACCATGCTC TGCTTGTAT TTTCTGATT TTTTCTTTC TATATCTCTG  
TCTTAACTCC CCAGCTAGGT AATAATTTT CTGAATACG GGACCAAGCT GACTCCTCT GCTGTCTCA GAAAGCTTAG  
CAGTTTCCAA CAAAAAATG TTCAATAAAC AACTATTAAT TGACTGATTA TAAAAAATCA GTGAACCTAT AAACCTAATA  
TAGCAATTTG CTAGCATGG TAATTAGCTT TTGCTAATA TTCTCCAGC CAGTCTCTCC TCCTGTGCT CAAGGACATC  
TAAAAAATAA AAAATCTAGT TGATCTGCTT CCATCTAGTG GCAATTAATA CAGGTGGTTC CGGTAGCCAG AAAACAGCTC  
TGGTAGATT GTGCCAGAAA ATACTTTTAC TCAGTAGTG CGAGTTTGA AGAAATCTC ACATCTGTGG GTTCTCTGCC  
ACAGACATAG GGAGACCAGC CCAGAGAAAG AAGCCTTTC TCAGTAGCT CCATTTGCAG TAGTAAAGAG AAGACAGAGT  
AATTAATAAG AATAAAAGA ACCTCCACTG ATCGTACATC CTCATCCAGT TACCCCTGCC CCCTTCTCC TTCACAGCCA  
AACATTTTAA AAGAGATGAC TGCTTGTCT GTCTCTACT TCTATCCTC AGTAATGCTC AATGCTGGC CGTCTGACCT  
CTGTCTTGT GTCTGACTG CAAATAGTCT CCCACTGAC ACCCTTGTG CATCCAGGGG ATACTTACTG GTTCTCTGG  
CAATGTTTGA AACCGTTCCT CTCTTTGT TCTTGGCA TTCAATACC CACACTCTT CTCTCTTCC TTCTCTCTGC  
CTGGCAACAT CTCTTCAAT CTCTTCCCT TAGGTGACTT ATTAGATAAT GATGTTCTC TGGTCCCAT ACTCTCTCC  
AGGTCTCTT CCATCTTAA AGCACTTACA CCTCCCTGG ATGATAGTAC CCACTCCTGA GATGGCAGT ACCTCCTGAA  
ATGTGAGGA CCAAAATCCA CTCTCTCTG CATAGCCTCT GTGCTTTGGA TAGGTCCAAT GAGCCACAGT GAATGATGTG  
CATACACCA AAGCTCAGTA CAAAACGTAA CCAATGATCT TTACCTCCA AACCTCTCAT TTTTATGT TCCCTCTCA  
GAAGTAAACA GGAATACCAT CCGCCAGTT CCAGGTGAGA AAGATGATAA TTTGATTCTT CTCTCTACT TTTAGCCAAT  
TAACAGACAC ATTCAGTTAA TATCACCTCC TCTTATTTA TGAACCCATT CTACTACTA GTTCCCTAGA CAGGCGCCAT  
CGGTTTAA CTAACTAGT CAAATGCCT CAAAACAAGT CTCTTGAAT CCAGGCTCAC CTGTCTCCA CACTTGCCAT  
ACTGTCTGC AGGTGACCT TATAAGATGC CAGAGTAAAG GCTACTACT GTTAAACCC CTTAGTAT ATCCCAAAAG  
ACCTCAAGAT AAAGCCATA TCATAGGCT TATACATTAG TTTATGATCT GGCTTCTGGT GCCTCATTTT TCCCACTTT  
TTCTTTGCA TTCTAAGCAA TGGCCCATAC TAAGTTTGTG ATGGTAGGA TGGTTGCCA AACCAGCATC CAATCCCTC  
AGAAATCATC TCATTCATT TCTAGCATTT TAAAGGAAGC TCAGTTGTCC AGCTGGGTAC TGAATATGTC ACCAAAGTCC  
TCCTTTCATC ATCTTTTCTA CTTAACTCT CTTCTCTAAA ATCCAGAGC AAGTCACTAA ACCCTAGATA CTGAGAAATA  
TTTTTCCATC TTCAATTTCTG CCAGGTGGG CATCACTTT CACATGTCTG CATCTCCTCC CACTGTGCTA TTTCTCCAGT  
AGAAGAAAT TTAGCTTCAA GACCAACTG AAAAATACTT GCCTCCTGG GGAAGCTGTA GGTAGAATTC ATGCTCCCTA  
TCTTTCCAC ATTTCTGAAG GACAATGCCT GTTAGAGCAA TTGAATGCAA ATAGTCAATT GAATAAGCAT TTATTCATTT  
CTCAATAAGT CGTTGTCAA TTGAATATT CTTAAATAAT ATATTAAAG ACAAGAAGAA CACACCACAA TGTTTTAACT  
CCTCAGAAAA AATTCTGAGG TAATCAGAAA AATCTCCTT TACATAAAT GCCCTTTTCT AATAGGGAAT ATTTGTCTG  
TCATTCATT ATTCAGTCC ACTAGACCA AAAAGCACAG CTCTGAAAGG AAGCTAGTAG ATTTATCACC TTATCTGGTC  
ATTTGGATGA GGACCCAGG TAAATAAAT ACTATGGGTT TAATGTGTCT AGCTAGAGCA GGAAGTAACT TAAGGAAGTA  
GAGAATGAAT CAGCAGATGT GGAACACTGT CGCCACTAAT AAACTTACC TTCTCTGGA TTTCTTGCCT GAAAAAGAA  
AATAGAGAAA AGGCATTAGC AAAAATTAGA TTTTAAAG TTTTCAAGT AAGGGAGAGG GAAGACTCC ACTCTCAAAA  
CTGTCTTTG AAGTATATTA GGTATTTGT AGGTGGACCC TATCTGTGTC AAAGGAGATT TGAGGAAGCT GCTTAATAAA  
CAGTGGTAGA CACTAATACA GAACAGACAT GTTGATGCAG ATGCCTCTG AGGTTCATT CCATTCTCG TGCTACTCAA  
GAAGACAGAA 25441 TTGCTAAAT GCCTGGTGGC AAGACCAAT ATGTCCATT AAGTGTAT CCCTCCCAA  
TCTGCCATCT CATCTACCT GCAGATTCT CCTTGAGG ACAGCTGCTA ATACTGTAA ACTATGTGCC ATTACAGCTC  
ACAGCATCAT CTCTATGAGA ATCCACAAGA GAATTTCACT TTGGTCTTGT TGGTAGGAAT TGTGCAGCT CATCTGAGTA  
ACTAATGTGT TTTTATCTTA CAAACACAAG GAATATCACA TGGTCTCTCT TGTAGTGGT GTAAGGAAAC TCAGAGCTAG  
ATCTGAGACC CTCTCTACC AAGTATATAA AACTTTGTGA CATACATTT TGTGCCATAA CTCAACCTT GGTTCACAA  
GATTTTGTGA CCTGAGTTT AAATTTGGCT TTCTTTT TTTTGTGA CTCAATAAAA CATCAAGCTC ATTTATTAT  
GCGAAGAGCG AAACAACAAA GCTTCCACAG CGTGGGAAGG GACCCGAGTG GGTGCCCCA ATTGGCTTCT TTTTCTACT  
TTTTAATTA TTTAATTTG CTATACTGAA CACATTTGT ACTGTTCTCA CATTCTTTT GAAAAAGCA GAATATAAT  
AAGTAGATA CTTAAAAAAA ACTCTTTGAG CAGAAAGAA CATTTGGGAG GCAATATATT TCAGTGGCTG TAAAGTGGCA  
TTCTAGAATC ATCTACCCA GGTGAAAGCC CTATTTGCC ACTGTAGTG TAGTGTGAT TTGAACAGCT ACTTCTTTT  
CTAACTACA ATTTCTTCT CTGTAAAGA GGCATAATAA TTGATATC CTCATTGGGT TGATAAATAA AAATATTTCC  
AAGTATTAG TTCAGTCTC AGCACGTAGA CAGTGTGCA TTAAGTTTT AATCCTTAA AGTATTAAAG ACTACTATT  
GAAATCTTT CTCTAAAAA TCAGCCTGCT GATGACCAAG TGCATTGAG CAGGGGGAAT CAAATCTGAA TTAATTTACG  
ATCTGGTA GCTTACATA AATATTTTT TTAGGGATGA TGAACCTAAC AGCAATAGAT GAGTAAAGAT CTGTCTCTAC  
TGAGAGAGTT TCATTTTGA GAAAAAGGAA CTAAGGGGGC ATGTGTTTAC TTTCTGCCC TGGTCAACC CTGTGTGTG  
GTTCTGGTG GAAATCTTC CAACCGAGGA AAAACACAGT TCACAAATCT GAAGACCAGT GATTTTAGAA GATGTATCTG  
GACTGGAGTC TAATCTCTGA CTCTGGGTCC TGCTGATATG GTATTTTGA GATTGGCT AAAACATCAT TGCCCTGGT  
TCCTATTTA CCAACAGGG CCAATGGTAG TGACTAATCA GAAATGATA ATGCCTGGT CACAAATGT GTCTAGATGA

GGCCATGCAC AAGGACACAT GTTCTGGAA CTGTTCTTA TTCCTTCTT AAAAGAAAGG AGGGAAAGTC TCCATACTAA  
GACTACTAGG GCAGGGGACA AAGTGCTAGA GTCAGAAGAT TCATCTGAGG ACAGAAGAAT AGGGGTGAAG GCTCTAGTCA  
CTTCATGGC TACCATGCTC TAAATAGTTA CCTGTGCCCT TTTTCTAACT ATTAGAAGCC AAAAAGCCTA TAAATCTCT  
CTCTCTCT CTCTCTCT GTGTATAT ATACATATAC ACACACACAT AGACACACAC ACACACCTAA ACACACACAT  
AGAGATTAT GACTTTTTAC TTTTATCCTT GTAAATGCCA TTAACATATAT TTTGTCTTAG ATTGATCTTG GCAATGTAGC  
CATTATTCT ACCATTGCTT CCATAGGAAA AATACTCTC ATGTTTTAAA GGACCAACCT ACAACTAAAA TCTTTGAAAA  
GCAGAATCAT TTGTAAGTTG GTGAAAATGG AAGATGTTGT TTTATAAATG AAGACTTTTT TTTTTTTTTT TTTTGAGACA  
GGGCTCACT CTGTTGTGGA GTGCAGTGGT GCTGTCATGG CTTACTGCAG CTTGACCTC CTGGGTTCAA GTGATCTCC  
CACCTCAGTC TCCTGGGTAG CTGGGACTAC ATGTCGATGC TACCATGCCT GACTAATTTT TTGTATTTT GTAGAGATGT  
GGTTTCGCCA TGTTGCCAG GCTGGTCTG AACTCGTGGG CTCAAGTAAT CCTCTGCCT CAGCCTCAA AAGTGCTGGG  
ATTAGAGGTG ACAGCCAAGG TGCCTGGCCC ACAGATGAAG ACTATTTAAT GTTATCTTAA AGATACCTA AGCTCTCTAC  
CAAGCCAGTG ATCTTTTGGG GCTTCTGTT TCTTTGTTG CATACTGTA ACTAGCCTAA CTGCCCCTTA TCTGTTCTCT  
GTTTGCCCCA CACTGATTCC CACAGCAGTT TTCAAGTTAT CGGTTGTAGA TCTGTACAG AAATGACTCC AAGGTAAAAA  
ATTTAAAAAC AACCCCTCTA ATTTTTTTAC CTTGCTTAT AAAACAGCCT TAGCCAGCTA ACCCTCACT ACATGCAAAAT  
GAGTTTGATT CTATTCTTTT GATTCTACAA ACACCTATTA AAAGATTTTA GAATTCGGAA ATAAATAGCT TCCTATTAA  
GGTGACTTAC AGCCCCAAAG TCCTTAAAAAT TCTTTAGACA ATAGCCACCT TATCCAGGG GGCAGTGTGT AATAACCCAC  
CCTGTCTCT ATCCGTCAGT TCTGCCATCA TCGCCCAAGG TACCAAGAAA GACAGGACAA CCGGGGTCAA GATTGAAGT  
CTCAATGGAA AGAATAATCA GTGGTTGGAG AAAACTGTCA TTTCTTTTT GCCTTAATGC AGTACTGTAT ACTTACTT  
AGTACTGTAT AGTACTAGT ACTGTATAAT ACTATAAGAT AGTGAGATTC AATCAGCACA GAATTTCTAA TAGCAAGGGC  
AGAGACATT TAACGTCTCA GTGCTCTCAG GTTATACATA GCTAATGAAG TCTTGCATA TCAACAATCC CCACCCCTCT  
CACACACTT GTCTTTCTGG ATTGGTTAGA AAATCTACCT AGCGCCACT ATTCTCAA TTAATGAAA GATAAGATCA  
GAGTGGCAG CAATTAGGGA CTGATAAATA ATATTTTTGT AATTGCCAGT GTAAATGGAC AGGGGGCAAC CTTTATACAT  
CATATTCACT GAACAGAATA CGTACTAACT AATTGATGG AAGGAAAATT AAAATGACAA TCAACTGAGC CCACAGAAAG  
GCAACACAGA GCAGTTGGTT AGCAATTGTT TCGAGATCAT CCTGAACTT GAAACAGGTA TATCTTTTTT TTTTTTTTTT  
TTGAGACAGA GTCTCACTCT GTCACAGGC TGGAGTGCAA TTGTGCGGTG TCAGCTCACT GCAACCTCCG CCTCCGGGT  
TCAAGTGATT CTCTGTCTC AGCCTCCCGA GTAGCTGGGA TGAGGCTGC CCGCCACCAC CGCTGGCTAA TTTTGTATT  
TTTAGTAGAG ACAGGGTTTC ACCATGTTGG CCAGGCTGGT CTGAACTGC TGAGCTCATG ATCCGCCCGC CTCGGCTCC  
CAAAGTGCTG GGATTACAGG CATGAGCCAC CACACCTGGC CAAAACAGGT ATATCTTAAA AGCTGCCCAA TGTCATGAA  
TGTTACAGCC TTGAATGGTT CTTCAGGTG AGTTGGCCA AAGTGGCAC CATACACCA AGGCTGTCT CAGGCTAGT  
GGTTGCTCAC ACTTTAAAGC TGAGACACAC TCATGCCCTA AGTGAATGC AGTGATAATC TGGGCGCAG ATGTAACTT  
CTCAAGGCAG TCCTCCTCT CTCTTCTCT CCAGTGAAGG ATGGTTGGAA AGCATATATG GTGCATTTGG TTAGAGCTGT  
GGCCTTGGT AATAGATACT TGGGAGAATA CATGGGAATT TCTCCAGGG TTAATGCAAT GCCCATGTGT TGGGAACCAG  
GTGACTCTT AAGAGGTCAG GTATTGGGA GCAGTGCTT GAAACCTTAG TGGACATTAG ACCCACTTCC TAGTGAATT  
GTAGCATTGA AATCCAAGGC ATGTAGGCTC TTAGAGGACA GAGATAGTGT GTCATTTTT CAGAATTAAT TAAGACAGG  
CCAGGCGTGG TGGCTCACAC CTGTAATCCA AGCCTTTGG GAGGCCAAGG CAGGCAGATC ACGAGGTCAG GAGATCGAGA  
CCACTCTGGC TAACACAGTG AAACCCCGTG TCTACTAAAA ATACAAAAAA TTAGCTGGGC ATGGTGGCAC GCTCTGTAG  
TCCAGTCTG TTGGGAGGCT GAGGTGGGAG AATAGCTTGA ACCCAGAAGG CGGAGGTTGC AGTGAGCTGA AATTGCACCA  
CTGCACTCTA GCCTGGTGAC AGAGTAGGCG TATGCTTCAA AAAAAAAGAA GTATTAAAG ATACATAAG AGCAAGAAG  
CATTAGAATA TCTCACTTAG TTGTTATCAG CTTAGCAAGC TGCCTTGAAG GTAATAGACA TTTTAAAAAG TTTATCAGAT  
GAAAAGCGAA AACTAGCCAA CTTGTTTTAA TGAAGGTGTG TCTGGGCTG ATTTACATGT CTCCAGGGAC TGATGGCTCT  
AGAAATGAAA GCTTGGCATC CTGCTTGTGT TGAATCTAT ACATTTAATT TCTGTGGGT TCTTTTTT TTTCTTTTCT  
ACTTTAAAGT TGTTTCTT TCATGTGAAG TTAACCTAC ATACCTTTTT TTAATCTCT TGCCAGCCAA ATGATAAATG  
CCAACCCAGA GAATGCAGTA ACCATGACTG CCACTGGAAT GAAGAGGGGG TTATAATCAC CCTCCTTAAT CATTGAGAAA  
CTTTGTCCA ATTCTGAAAG AGAAATCAGT AAGGCACATA GCATGAGACC ACCAGCATT TTTCTTAGT CTATCTCATG  
ATATTGACT TTTTCTCTC TTACATCTCC CAGTAGTAG CCATTGTATG CCATTGACA GATGAGAAA CTGGCATGGG  
AAGGCCCTG ATGAGCTAC AGCATAGGCA AAGATGGAC CAGTTTGTCT AGTCTAATGC CTACAGAAAT TCAATGCCA  
GATTGTGGT TCATAGAGTT CCTGAAAATG CACCTAAAAA TGTTGGCAAG AATGGTCATC GTTGATTAT TGTCCATGGA  
CTGTTCAT GACTGGAAT CTGAAACACA GAGAAGAGCT AAAAGCCTAA TACAATCTCA GGAATAAATA AAGCCAATGA  
TCTGAAGTG ATAATTCACC AGTCAAAGGA AATCAATTAAT GCTTTTACTT TAAAGCAGTT GTGCAAAAAA AAGCACTGA  
TTTTACATG CCAAGGACCT GCATAATTT CTTCCTAATG CAGTAGTAC CACTCCCTC TACTCTCTC ACGAATAAGT  
AAAAGGGCAT GTTTAGAGAT ACTCTGTAA GTGTAACATA AGTTCAATTG GGAGCCTCTA TTTGAAATA CTGGTATAAA  
AAAAAATCTG TCTCTGATA CTAACATTTG AAGGAATCTA CTTTTTACA TATTGCCAGA GGGTCTGATT CTATCTTAG  
TCTTCCCT TACTTTGAT AACCTTTTCA AGGTGATTG ATCCACAC CCAATATAT GATTGAGAGA AGGCTCAAGT  
TCCAGGAGC TCCAGACAGA AGGTACCTGT TGGCTGTAG AAGATGAGGA GGAAATGAAC ACTAGCTAGG CCTTAAAGGG  
AAATGTCTCT GATAGGCTA ATACACAGTC CTCTGTAAA GGCTCCCTG CCTCTCTG CTCATCACT CTACTCCTG  
GCCTGGGCA CGCAGCACAC AGAGATCAGC ATTTCTGACA GCTTCTGTAG ATCTACCAT TTAAGACTT TTGTCATCCA  
TGCAGATAGT CTCAGGAGCA GACACAGGTA GCTATTCTT CACATGCTAG CTTAACATGC ATTTGCTTTA GCACCTATTG  
CCAGGCAGT GTGAGGTGG AGGTATACA AAGATGAACA AGACATGATT CTCTCATAT ACAGATAGAT TTTGGAGGCA  
TTAGCTTAGT GATGATTAG GAGTATCCAT TTTTGGGA AGTAGGCT CATTAGTGAC CTTTACAGG CATTCAATG  
GGCTAACAGA GATGTTAGAT TGTAGTGGA TAGAAGAATG GGTAAAAAGT AAATCAGTGA GTTCAGATT TAGGAGTTAA  
GATGGCAAGA GGTGAGAACA AAAAAAGGAA ATGATTGTCA TTAAGGAGG AGGAAAGACC AGCCAAAGAT TTTACAGTGA  
GTTAAGCATA CAAATTTATT TCTAGGCCAC ATATTCTTAG CAAACAACA GTAAATGTT TATGATGTCT TTTCTCATA  
TCTGCTCATC CATCAGCTCC ATCGTTAAGA TTTGATTTT CCAGGACAAA CTTACTACT TTGACATATT GGACTAGGAT  
TTGACCAGAT TCCAGATGAT TCACAAATGG TTTTCTCTT CCAATTAAC TCAGTTCTCT CTGAGCAGAT GAAGGTACAT  
GCAGAGGTAA AGCTGAAGCT GGCCAGGGGA TGGTACAGT TCATGATCCC CAAATCTGGT GCTGATAGAG GCTCAGCTG  
AATCACTCA ATGAAAAAGA AAAAAAAAAA AAGACAAAA CAGTATTTCT GAGTAGAGAC CCTCCCTTGA GCAAAGGATT  
TTAGCCAAA GCTGCTGAC TACATTACTT GTGATTTGT TCCAGGCTT TATTTCTTG AGAATGATG TGGTGGTGA  
ATGAGAGATG AAGGCAAGGA AGCATTGAAA GCTGTGGGA GAGGAGTAG TACTCCAGG TGCTGCCGA GCTAAGGTGA  
CCCTCCCTT CTGCTGGAAG TACCATGCCA TATGGCTCT GCATCAAGGG CTCTTATGGG ATATTCTCAG AGAATCTCTG  
CCGTTTCATC TGTTCTGATA TCTACCCAAG CATTTTGA AATATCCCA TCACTGAAG CAAGTCCAAC TTCCGTAAT  
TCCAGTAGGT GGGTTGACAG TTTTATAATT TCAATAAGG ATTTGATAG CATTCTAAG AATTAACCTA CTTAACTAA  
TGCATCAGGA GCATACTGT AGAAAAGTTA ACCAAAACCT CTGAATGATG GATGACATTG GTTTCTCTC ATATGGAGAT  
AAGGTTGGCA GTTAAAAATG AAAAAAAAAA AAAAACCTAC CTTATTCAA ACTTGAAGAG ATCAAGAGAT TGTGTTTTT  
TTTTTCAGT GTTATTCTC TAAAGTTTA TGATGAGGA AAGTAAAG TGATTTAAG AATAAGCCAA ATAAACAAC  
CAAGAAGAC TCCACTACC CTGGGAAGGA AACTGGTTG TATTAAGTAG GACACCACAT AAAACAGGTG TATTGAGAG  
GAGAAGAACC AAAATGTAAC TGAGGTTCAA CAAGACATTA TTTATGCAAT GGCAATGAGA AAAATAAAAA ACACAGTATA

ACCATGCTGT ATTGCTATAA GTCATGTTAC AACTGCGGAG ATGGCTTCAG GGGTATTTGG TTTTACTTTT TTGTTTGGGA  
GGTTTTTCAA AAAAATTTAG TTAGAATAAG TCCTTTGAGA AACATCACAG TAGGTAAAC AAAGTTAGGT TAAATTAGGC  
TCCTAAGTTT GACTTCTCAG CAACTTCTA CTGAATGTTG TGACTGTAA CCAGGATTG CATGACAAA CCTCTAGTCT  
GAAGTTTCTC ACCTTGACAG GTTGGTTCTG GATGACCA GTTTCCAAAT GGTCCACAGG TGTTTCTTC AATCCCAGTT  
AAGTTTGTTC CTTGAGAGCA GCTGAAGGCA CACTGTGAGC TGAAGCTGAA GTTCCCAAA GGGTGAGTAC AGTCCAGTGT  
ACCCAGCTCT GGGGCTCCA AAGGCTCACA CTGAATCACT TCAATAGGGA AAGAAACAGT ATGGGGAAGA GTTAAGAGGA  
ACTGACGCTT GGATTTGAAT CCTAGCCCTG CCATCTGATA ACCATGTGCC TTTAAACAAG GTTACTGAA CCTTCCAAT  
TCAGTTTCTT CATCTATATA AGAGGAATAA TGAATTGTG TTATCTTTAT CAAATTGATA TGGAACTAA ATGTAATTCA  
ATTAGCATAA GTCAAGGACC TTAGAACAAA GCGTGACTA TCAGAAATTC TAAGTAAACA TAGCTAGTC TTCAATTAT  
TATCTTCAGC ATTATCTGTA GTGAGAATCC TTAAGCCAA ATAGGTGTAA CTGGGAATGA CCAGCTTAGT CGGGAAATAA  
CTATCAGCT AGAGCCCTG AGTCTACTAG AGTATTGGG GCAAGATGTT CAGAGAAAGA GTGGGTCTCC ATAATAAGCC  
TTCTTTGCAA GGAGAGAATA TAAAAGCTA GGAAGCAATT TGACCTCAAT TCTGTCTTCT ATTCTAGCTC AGTTCAGAA  
TTTAACTCT TTGATTTTG ACAACCTCT CCAGAACTT TATCTATTTT CCTGTTCTGA TTGGTGGTAC AATAGGTAAA  
TTTAAGACTT GGAAATCAAA GTTTTCACAT TTTAGACCTT GCCATGCCAT TTAGTAAACA GTACAACCTT CATGTCTTAT  
TCCTCATCTG TCAAAATTTAA GCCATTATTG CTACCTTGCT CTAGAGACTT CAAGGAAGAA TGGACTCAAG GAATCAGAA  
AATTTTGTGA TTGGAACCT ATATGAGATG AGATTAGGGA GAAACATGGG AACTAAGAGA AAATGTTATC TTTTTCATT  
GATTAAAGA GTATCTATTA TATATCAAGC ATTACTCTGG GGGTGAAGA GCTTAGATTT CACCTGTAG GACAAATGG  
TAGGTAGAAA TTAATGGGTG GATTGTCTAG TATGTGTGAT GTGTTTAAAT TGCTTTTAAAT TGATCAGTCT CCTGTAGTA  
TGAATAATGT ATTTGAGGGG AGCTAATTTA AAATTGTGGA ACTCATCTAA TAACTATTG CAAGAATCTA GAAGAAAGAT  
AATGACGGCA ATGGTAGTAG AGTTGACAAG TGAAGACAA ATTAGAAAA CACTAAGTTG TAAAAATGG TAGAATGTGA  
CCCTGCATAA TGTTGGGG AGTTAAGAGA GTCTCAATCC AGGTGGCCA TGTAATGGT GATTCACAT ACTGAGATA  
GAAATACGAA GAGAAAAGCT GACTGGGAAC AATTGGTTTT ATAGTCTTTT AAACATCCCA AAGGACATCC TTAGCATATT  
TGAGTTTCTG GCTGGAGATA GGCTTATCAG TCCAAAGATC ACATAGATTG GTGAGTCCGC AAAAGTCAGT AAGTTTGACC  
AAAGGATACA TGATAGATTAG AGTCAGAAGA GCAATATACA AAAGACAAA GCTGAGAAAT TATAGATTG TATGGTCTG  
ATAAGTCTCT CTGAAGGAT CTCAGGAGAA GTCTACACAG GTAGAAAGAA TGAGAAAAG GTGATAGTAG AGAAACCAAG  
ACAAAGAAAA GTAAATGTTT AAAATGAGT GAAATAGGCA TACCAATAAT TAAAAATGAG TAAAAATAGC ATACCAATAA  
CATAAGGGTT AAAAAATAGA GTTCAAAAAT GGGGTGAGGG TAAAGTATTA GGAAGGAGTC ATGGCCAGG GATCAAGTGA  
AATGAGTTAG ATCTATAGAT CTATTTTCTG TGGTTGACAT TAAATGTAT TTTGGTTTTA ATTCTTTATT GTTTACAAAC  
ATTGCTTTT TAAAAATTA AATTGTCCA TTCAATTGAG GCTCACAAGC AAGTGCTCTA TATACAGG CATTTTGTGG  
ATCCCAAGA TGCAATGATA AATAGGACAT TACTGTATCT CAAGAAGTTT TCAGTACCAG AGGAGACGGA CAAGTGAACA  
GATGACTTCA ACATAAGTGG GAGAAATGAG GAAGAAATAT GTGGAGCTAT CAGAACTAAG AAAGCTTCTT AGAAGAACT  
GTCTTTGAAC AATGTCTTAA AGATGACATG TTTTGTGCC ATGTGCAAAA TGAGAGAGAA GGCCACCAGC AAAGTCAGTG  
TGCTACAGAG CACATGTGTT AAGTGTGGAG AACTGCAAG AGGAAGGAA CTACTAGAAG GAAAAAGCAA GATCTTTCT  
GGGTAACTCA GCCTCTTAAT GATAAATGGC ATAGTTTCTT CCAGACTTTA GAGTTCTAAT TAATCTAACA AGCTATTAG  
ATCGTGAGCT TCTTGAGAGC GGAATCTAC CATGCTAATT CCTTATGGTA ACCCTGACAG CTTTTATCCC AACACTGTGC  
TTCTTGTGT ACTCAAAAAG ACTTGTGAG AAGTGAGTCG AAACCTCATG CTGACTTATG AAATCTTTAC GGAAAGGTAA  
CAATATTGT AAAGCAGAGC TTTCTGATCA AAACCTTCCA TTTCTCAGAG TGGCTAGTAT CATTTTGTTC CAACAGCTT  
CATGATAAGC TATAATGATT CCTGTGACTT TACCTAAGAA GAAGAAAGAG ACTTACAAA CTGACACTGG  
GGCCCATAGT ACCCCACATC ACAGTTGCAG GTGTAATTAT TGATGATTTC TACACATTCT CCATGGCCAC TGCATGACCA  
GGGCTGGCAA GAAGCTTTAA GGAGGTCAGA AAAAAATAT TTAATGTGA TTACATTTTA GACTCAAAAG TCATTTCTTT  
AGACATAGAT AACCTTTTGT CTGAGATGAT TTAATAATC AGGAAAGGTT TATTTGTAAA TTCATAGCAT AAAAACTATA  
TGCTAAAAAT TTTACGTATA AAATACACTA AGCATATAGT CATAGGCATT TATTTGCTTT TGGAATGAAA TTACCAATAC  
TAATATTCTG TAACACTTAT AGGAACTTA GTGGCATAAC TTGAACTCTT TGAAATTACT TGTTTTTAAAT GAGTGAGAAG  
GTAAATGAT GACCTGACCT CAATCATTTT TGCATGCAAT TATTTCTTGG CAATCCCTTT CTTTATAGAA ATCAAAGATT  
AAAAAGTCCA AATTGTCTAA AACGGTAGAG TCCAATTTAT AAGAGACCAA ATTAACATAT GTTCATTATT AAAACATCAC  
TTGGAATAGT CTGGCTGTTT TGGAATTGTA GAAGATTTTA CAGAACATTT CATACACCAA AGATAGTGCA ATTTTATAT  
AAAATTATAT AAGGTTAGAC CAAGAAGGAA GCACGACGCA CCACACTCTC TACTTCACAA TGTGAAAAC GAGGTGATGT  
GAGCCTAAGT TTCCAACCTG CCCAGCTGT CAGCTTCTCC TCCCTGCCT TATTATCAA GGCAGTATT GTCTAGCTCT  
TCCTCTGATC TTCTACGTA GATCTATCAT TTTGATGTA CTGATTAGT GGGTATAGCT TTTGTGACA GGGACAAATC  
TTACACACCA AAAATCTTA GGAGTGACAC GATGCAAGT TATATAGAGG GCTAGATGTA TTTAGAAAG AACCAAGC  
TGTTCTCATC CCCCCACTT TCCATGGGT AAATCTGAGT ATTCTCTTAA CCGTGGCCCT TCCTGAGTCT GAGGCAGCAT  
AGCCGTCTTG TACTCCCTA CCGTGTAAAC AGAGGCTGC CTTTGTGTTG TGGCAGGCGT CATCGTTCCA TTTGCTGCA  
TCTTTGTTT TCTTGATATA GATCTCCAGC CAGTCTCTCT GTTCTTCTT GTTGTGGG TCACCATCTC CCCAGTCTC  
TGCTTCTCA GTTAGAGATT TGTGTGTTCC CACCAAGCT CATATCTCT CTATCTTCCG GATTCTATC CAGTAGTAAG  
AACGACTGAA AGGCAGAGTC TTCTCCAGAT ACTCAATTTT CGCTTGTGTT TGTATGGCAA CTAATCTGT GTAAATTGCT  
CGGCAGAATC TTCTAGCCCT TTGCCAGTTC ATGGGTTTT CAGAATAATG GTAAGTCCAG CAGTCGGTTC CATGATGTGC  
CAGGAAATCT GCAAGACATC AGTGTGACCT ATGCAGACTT ACATAATGTT ACAGCTAAA AGAACCTAGC ACTACTCCAG  
GCTGAGCTAG ACATTAGAG ATGAGGAAAC AGAGCCTAAG AGTGTATGTG ACCATCTCAG GATCAGAGAA TAGTTGTTG  
CAGATTGAA GTAGAACCTA GACCTTCTG CTGAAGATA AGATGCTTTT ATCTAAGGTT CTATTTGAAA CAAATTTAGT  
GGTTTTCTAG GTTTATTTT TATTAAATTT TTTTCTCAA ATTATTTTCTG GTGAAATTTA ACCAACATAT TTTAGACATT  
CATATTTCTT TTTCTTTGTA GCTGTTAATG ATTTACAAT AATTACCGTG TAATATCATA TAACATATA ATTTACGTAT  
ACTTTTTAAT CTGGAATCA TTTCTGAA GCAACACAT ATGTACCTAT GGGAGAAGCA TAATAAGGAG AGGAAGAA  
GTGACATACT TTTAAGTAAC CTCTTTTACA TAAAAACAT TTTATTTTAC CATAGGAAGA ACTGCTTCTG GAAAGGCCA  
ATATACCACT CAATCTTAT ATATCTAAT GTATAATTT TAAAAAGAAC AATTACAAA GCCAAATGGT ATAGGATTAT  
GAAATTCATT AGATCATGTT CTATACACAA AGAGACTCAA CTGATGATGT TTAATAACA TATGGACCCA TCAAAATATGA  
GGGCTTTGAA GATATCTAAT TAAACACATA ATTACAGAT GACTTCATAA TAATATATGG CATTTAAGC ATGGTATGAT  
CTACATGAAT CACTATTTAA TACAGTAAAG AAACAGATAT AATTGATGGT AAAGAGCATC AAAAAATAA CATTTTGAAC  
AGAGTTTTGA ATGAGCATTC CACTAGAATG CAAGTTCTAA GAGGGAAGAA ACTGTTGTGT CCAGTCTGT ATCCTTAGTG  
CCTAGCATAA ATTTACACA TTGTAGGAC TCAGAAAATA CCTGTTGTAT GAAAAGAGCA CTAAGTTTCT ATGTGACACA  
GTGACAGAT GGCATAAGGA ATGTGTGAAC GGGAGAGTTA GCATGTTTGC TTGGCTAGAG CTGAAAATCC AGGCTAGGGA  
GAAAGAAGAC ATTAGTTTAC TTAGGAAATG AAAAAACCA TTCAAAGCTA TTGCTGGAGA GTCTTCAAG ATCAGATATA  
AAATTTGTCA CAACAATGGG AGAAGGACCA AAAAAAGATA AACCCTGTC CTTAATAAG CTCTATTGT AATTGTAGAA  
ATGACATTAA TGTACACTGA ACTATGAATA AAAAAATAGAA AATGAGGTGC TAAATATTTG GTACAGATTG TAAGTACCTT  
AACAGAGATT TCITAATTAA CATTATCTCT TTATAATTGA GGGATTTTGT GGGGTTATTG GGATTTGAAC TCTACAGCAT  
GGGCTATTAT AGGTTAAAA TAGTGTTCAG GAGTTTCTGG GGAAGAACTA AAGGTAAGAA GAAAAGAGAT GTTTACAGAA  
GGGATAGAAT TAACAGCTCT GTGAAATAAT TTTCCCTTAG ACTATGTATA ACTAGTGGAT ATTTAAGAAA AATGAATATA

AGTAAATAG ACTTAGCGAT ATATAAATAT CATAACATAC CACAACAGAG CATTGTCCAC CCCACAAC TGAAGATGTT  
CCATAAGTCC CTCTGGGTGC TCTGACATT CCATGGAAAT ATCTGCAAT GAAATACAAA ATTATATTTA GATGTATACT  
CTTAAACCAC ACATTTATAG CCTTTGAGGT GGTGCTTACA ACTTTCTTAA TAATCAGAAT AAAACACATA TGCTACTAA  
CCCTGTCTGA AGTAACAGGT TTCTCAGACA TAGATGAAAA ATTTACTCAA ATTTACATCA GAACTGATGC ACAGTTTGT  
TTTGTCTAT TTTATTTTGA CGCTTTAGTC TCAAGTTGCT AATCGGTACT GCCCTGAATT TTTTCTATGG TTTGGTAATT  
TTTATACCTG CTTTTCTGCT GAGCTATTAG ATAAAACTAT TTAATATTTA CTATGTATAT TTTTAAAGT ATTGTTGCTG  
CTTAATTAAC TATTGATGCT TATATTTAAT GTTATAGCCT CACTCTTGAT CATAATGGGT CAATGCCTCA AATACCTAAA  
AAAAAAGTCT ATTAGATAGC CAGACACCAG GAAAGAAAAA TATTCTTTT TTTAATAAAA AGAAATACCT TTTTGAGCAA  
CTGAAATGAC AAAGTCACAA ATTTCTGCA CACCTTAAAA TATACTTAAT GTAAATGACG AGTTAATGGG TGCAGCACAC  
CAACATGGCA CATGTATACA TGTGTGACAA ACCTGTATGT TGTGCACATG TACCCTAGAA CTTAAAGTAT AATTTTAAAA  
AAATTCTATC TTCCAAAGCA TATCACTTCT CAGGTAGACA CAGTGTATG TGCAAAAGAT CTGATTTCAA TAGTATTTCT  
TCAAGAGTCT CCCAGAGAC AAAGTCAAGA AGAGGAAATC AGCATATCTG AGAAGAAAGA TTTCAGGATC ACTTTTGTG  
AGGGTCTGAG AAAATGTTTA GTTTCTATAT TATTTAAAC CAGAATTGAA ATGGGGTGAT TCCTATCCTT GCCACCTGCC  
TCTACAACCC CAAGAGTTTC TATCTGAGCA TCTAAACGTC TTTTAGGCTG AAAGGCTCAC CATGGCTTTG CTGCTCCTT  
CTCTAGTTCT TCTGCAGCCC ATTGAGCCTC TTGACTTAGC ACAAGGGTCT CAGGTCTTTG CCCAAAGGGA GTGTGCTGTG  
CTGCAGGTAG ATGCTCAGA ATGTCAACAG AAAGCCTTGC TTCTTTTCAT TTCTTAACC CAGTCTCACA TCCTCTCCT  
CCTCCCCCTT TCCTCCCCCT TCCTCTGCA CTCTCTTCT CTCTTTCCC ACCCTTTCC TAGACTGGCC TCCTGCTCT  
CCCACTGAGA CAAAAATGAA CTGCTGATCA GAAAGTAATG TGAAGTATG CTCTCTTCT TCCTCTCTT CTATCTTCC  
TTCCATCTC CTATGCACTT TTCTTACCC TCCTCTCCT TCACTCATG TTGTGTCTG TCTTCTCTT CTCTTTTTC  
CTCTGCTCC TCTTCTCTA CTGTGTTCTG TTCTGTTT TGTGTTGTTG TTGTCTCTT CTCTCTCTT CTCTCTCTC  
TCCTCTCTT TCTTTTCCAC CACCCTCCCC TATCTTTTCT ATAAATGCTA AACTAACTT TGGTAAATGG TGGTAAATGG  
CCCTTGAAA TTGCAATAC TACAAATCAA AACTGCATT CAGACATATT TATGATGTTT GCAAAACTTC AGTAGAGCTA  
AGCAGTGGAC TTGACTCGT TCGGTTCTT CACCTCCGTC TTTCTTGCT CACCACCTAG TGGACGTCCT TGTAGTGGC  
ACTTCTGAA GTTAAACCCCT GAAGAGAGCC CATGCTCTCT AGCTTTTTCAC CGTGTAGGTT TGGGAGCCTA CAAGTACCTT  
TAATATTCTT GAGTATAAAA ATGAGATGGT TTTATAAGAC TGCATGTGAA ATTAGGACCC ATATGATGAA GGACAATAAA  
AAGGAAGACC CACTGATGTG AGTCAATGAG TCAAATGCAA ATCAGATTGT CATTTTTAGG AAAATAATAA TAACAACAAC  
AAAAACTCTG AAGCTCAGCG CCCCATATTT ATTAATTGT TTAATCTTTA TAACAGCTCT CTGCTATAGA TATGATTATT  
ATCCCCATT TAAAGAGTCT CAAAGAGGTT AAGAAACAAA TTCAAATACT AGCGAAAGAC AAGAAATAAC TAAGATCAGA  
GCAGAACCTT AGGAGGTAGA GACACGAAAA AGCCTTCTAAA AAATAATAA ATCCAGGAGC TGCATTTTGA AAAGATTAAAC  
AAAATAGATG GACCACTAGC TAGACTAATA AGAAAGAAGA ATCAATAGAC ACAATAAAAA ATGTAATAAGG GATATTACC  
ACTGATCCCG TAGAAATACA AACTACCATC AGAGATFACT ATAAACATCT TTACACAAAT AACTAGAAA ATCTAGAAGA  
AATGGATAAA TTCTGGACA CATACACCTT CCCAAGCTA AACCAGGAAG AAGTCAATC CTGAATAGA CTAATAACAA  
GTTCTGAAAT TAAGGCAGCA ATTAATAGCC TACCAACTAA AAAAGCCCCA GGACAGATG GATTACAGC CAAATCTAC  
CAGAGGTACA AAGAGGTGCT GGTACCATTC CTCTGAAAC TATTCCAGAG AATAGAAAAA GAGGAACCTC TCCTCACTC  
ATTTTATGAG GCCAGCATCA TCCTGATACT AAAACCTGGC AGAGACACAA CAAAAAAGA AAATTCAGG CCAATATCCC  
TGATGAACAT CATTGCGAAA ATACTCAATA AAATACGGCA AACTGAATCC AGCAGCAT CAAAAAGCTT ATCAACCACA  
ATCAAGTTGG TCTCATCCCT GGAATGCAAG GCTGGTTCAA CATACACAAA TCAATAAACA GAATCCATT CGTAAACAGA  
ACCAATCACA AAAACCACTG GATTATCTCA ATAGATGAGC AAAAGGCCCT GGATAAAAT CAACACCTT CAATCTTAA  
AACTCTCAAT AACTAGGTA TTGATGGAAC GTATCTCAA ATAATAAGAG CTATTTATGA CAAACCCACA GCCAATAGCA  
TACTGAATGG GCAAAAACTG AAAGCGTTCC CTTTAAAAAC TGGCACAAGA CAAGTATGCC TCTCTACCA CTCCTGTTCA  
ACATAGTATT GGAAGTTCTG GCCAGGGCAA TCAGGTAAGA GAAAGAAATA AAGTGTATTC AAATAGAAGA GAGGAAGTCA  
AATTGTGCT GTTTGCAGAT GACATGATTG TATATTAGA AAATCCCAT GTCTCAGCCC AAATCTCTT TAAATAGTATC  
AGCAACTTCA GCAAGTCTC AGGTACAAA ATCAATGTGA AAAATCACA AGAATTCCTA TACAGCAATA ATAGACAAAC  
AGAGAGCCAA ATCATGAGTG AACTCCCAT CACGATTGCT ACAAGAGAA TAAATACCT AGGAATCCAA CTTACAAGGA  
ATGTGAAGGA CTTATTCAAG GAGAATACA AACCATGCT CAAGGAATA AGAGAGGACA CAAATGAATG GAAAAACATT  
CCATGCTCAT GGTAGGAAG AATCAATATC ATGAAAAATG CAAAGTGCCT CAAGTAAAT TATAGATTCA GTGATCTCC  
CATCAAGCTA CTAAGTACT TTTTACAGA ATTAGAAAAA AACTACTTTA AATTTATAT GGAACCAAAA AAGAGCTTGT  
ATAGCCAAAG CAATCCTAAG CAAAAAGAAC AAAGCTGGAG GCATCATGCT ACCTGACTTC AACTATACT ACAAGCTAT  
AGTAACCAAA ACAGCATGGT GCTGGTACAA AAACAGATAT ATGGACCAAC GGAACAGAAC AGAGGCATCA GAAATAACAC  
CACACATCTA CACCATCTG ATCTTTGACA AAGTGTGACA AAAGAGGCAA TTGGGAAAGG ATTCCTTAT TAAATATGA  
TGTGGGAAA ACTGGCTAGC CATATGCAGA AAAGTGAAC TGGATCCCTT CTTACACCT TATATAAAAA TTAATCAAG  
ATGGATTAAA GACTTAAATG GAAGACCTAA AACCATAAAA ATTCTAGGAG AAAACCTAGG CAATACCATT CAGGACGTAG  
GTATGGGCAA AGACTTCATG ACTAAAAAC CAAAAGCAAC AGCAAGTAAA GCCAAATTTG ACAAATGGGA TCTAATTTAA  
CTAAAGAGCT TCTGCACAGT AGAAAAAACA AAATCTATC AATAGTGAAC AGGAAACCTA CAGAATGGGA GAAAAATTTT  
GCAATCTATT CACCTGACAA AGGGCTAATA TCCAAATCT ACAAGAACT TAAACAAAT TACAAGAAAA ACAAACAAC  
ACCATCAAAA AGTGAGTGAA GGATATGAAC AGATGCTTCT CAAAAGAAGA AGTTTATGCA GTCAACAAAC ATATGAAAA  
AAGCTCATC TCACTGGTCA TTAGAGAAAT GCAATCAAA ACCACAATGA GATGCCATCT CATGCCAGTT AGAATGGCGA  
TTATTAATAA GTCAGGAAAC AACAGATGCT GGAGAGGATG TGGAGAAATA AGAATGCTTT TTACAGTGT TGTGGAAGTG  
TAAATTAGTT CAATCATTGT GGAAGACAAT GTGGCGATT CTCAAGGATC TATAACTAGA AAAACCTTTT GACCCAGCAA  
TCCCATTACT GGTATATAC CCAAAGGATT ATAAATCATT CTACGATAAA GACACATGCA CACTTATGTT TATTGAGGCA  
CTATTCAAA CAGCAAGAG TTGGAACCAA CCCAATGCT CACCAATGAT AAAGTGGATA AAGATGATGT GGCACATATA  
CATCATGGAA TACTATACAG CCATAAAAAA GGATGAGTTC ATGCTCTTG CAGGGACATG GATGAAGCTG GAAACCGTCA  
TTCTCAGCAA ACTAACACTG GAACAGAAAA CCAAACATTA CCCATTCTCA CTCATAAGTG GGAGTTGAA ATGAGAACA  
CATGGACACA GGGAGGGGAA CATCACACAC TGGGGCATGT CAGGGGATGT GGGGCTAGG GAGGAACAGC ATTAGGAGAA  
ATACCTAATG TAGATGACAG GTTGATGAAT GCAGCAAAAC ACCATGGCAC ATGTATACCT ATGTAACAAA CCTGCACGTT  
CTGCTCATGT ATCCAGAAA TTAAGTATA ATTTAAAAA AGTTAAAAA AAGAAAGTTG CCTTAGTCAC ATAAGTATA  
AGAGACATGG TTGGGAATT GAACAGAGGC CAATCAGTTT CTAAGCTATG CTCTTGATG TTAAGCTGAA CTATTGGCAG  
GAACTTGGAA GACATGGTAA AATGGGGAAA AACGTGGAGC CAGGGAGACT TGTGAAAGTG CCAGTGCTCC CACTATACCC  
TGAAAGAAGT ATCTAGACTT ACTTTTTCT AAGTCTCTC CTCTAATTCT CTCAATCTCT CTCTCTCTT CTCTAAGAGA  
TGGGAATGCT GCTCTGTCAC TCAGGCTAGA GTGCAAGTGT GCGATCATAG CTCATTGCAC TCAAGGAATC CTAGGGTCTA  
GTGCCCTTC TCCTCAGCC TCCCAGTATG CTAAGACTAC AGGCACATGC CCCAACCTC GACTAATTTT TTTATTTT  
ATTTTGTAG AGACAGGATC TCACTATGTT GCTCAGGCTG TAATCTGTG TTGAAGCTT TCCAATCAGG CTTCAGCCA  
CACCAATTCC CTGAGACTGC TCTACCAAG GTCCTACACT TCACTAACAC AAACAGCCTA TTCTCCATCC TCATCTTACT  
TCACCAGGA GCTCCTGGTT TTCTCTAC TTAAGTGTG ATTTCTTCTG TATCATGTG TGATTCTCCC TCATCTCCCC  
AACCTCCAAA CTTTGGAGT ACTCCAGAGA TCACGCTTT GCTCTTGT GTCTAACCT ACTAAGTGG TGGTCAATT  
CACACTCTG ACTTTGAATA CCATTTAAAT GCGAACGAAT TCTAAATCT GTACAACCTG AACCTTCTC CTGTAGCCAA



ATGCCTACTC AACATCTCCA TCCCAAACA AATTAGTTG TTCAATAAGC CTCTCATATT TTACATATCC CAAACTGAAC  
TTCTGAATTT CTCCTCCAAT CTGTAGGGCT CTCTCCACAG CCTTTCCATC TCAGTGGATT ATAACCTCAT CCTTCCAGTT  
CTCAGACACA AACATTTTGG AGTTAAGCTA GACACCTCTC TTTTITTTCA CAAGTCATAT CCAATGTGTC AACAAATTTT  
GGTAGTGGAA ATATTGCGGG ATTTTAAAG AAATCAGAGA GACCGTAGGG GTTCAGGAGG ATATTTATTA TTAGGTTGCA  
CTGGCCAAGT CAGATTAACA TCCAAAGGAC TGAGCCCTGA ACAAAGAGTT AAGTTACCTT TTAAGCATT TGTGGGGTGG  
GAGAGAGGGG TATCTGTGCA GGGGGAAGCA TACTACAGAA GTGAGAAATA AAGACAGTTA TTCAATTAAT TGAGACATGC  
ATTACATCAT TTCTTACTTT TCAAGAAGAA ACATGTTTTG CGAGTTGAGT TTATCTGTCT AGTGACCTTG CAGTGCACA  
GCTAGAGAAA ACAGGTCTTC ACAATGCCTG GGAAGGAGG AGAGGTAAGT CTCACTAGCC ACAGAAAAAC AGGCAGTTAA  
TTTTAAAGG GCTCCAGCTC TTTCTCTTC TCAGGGGGAG TTGGGTTTTG TTACATACAA CTGAGTTTCC GCTTACACAT  
TATTTAATTT CTTTAAATTC CTGTTCCAAA AGAAGCCAGA TACAAAAGGT TACATGTTGT CTGATTCAT TATATGAAA  
CATATAGAAG AGGTAATCC ATAGAGACAG AAAGTAGATT AGAGGTTCCC AGGGGCTGAG GAAGAAATGG GGAATACTG  
CTTATAGGTT ACAGAGTTTT TTTCTGATAA AAATATTTTG GAAGTAGATA GACATTTTGT TAGGCCATTC TTGATTGTT  
ATAAAGAATT ACCTGAGACT TGGTAATTTA TAAAGAAAAG ATGTTTAATT GGCTTACACT TCTGCAAGCT TTACAGGAAG  
CATGGTGCCG ATATCTGTCT AGCTTCTGGT AAGGCCTCAG GAAGCTTACA ATCATGGCAG AAGGTGAAAG GGGAGCAGGC  
ATATCAGATA GCAAAAGCAG GAGCAAGAGA GGGATGTGGG GAGGTGACAG TCACTTTTAA ACAGCCAGAT CTGTGAGAA  
CTCATTACT ATCAGTAAAG CAGTACCAAG AGGATGCTT TAAATCTTTC ATGAGAAACC ACACCTCAT GAGCAATCA  
CCTCCACCA GGGCCACCT CCAACACTGG GGATTACAAT TTGACATGAG ATTTGAGTGA GAACACGGAT CCAAACATA  
TCAGAGATGG TGGTTATACA ATGCGATAAA CGTCACTGGA TTGTACACTT TAAGATGGTT GTTTTATGTT GTGTGAACCT  
CACCTCAATA AAAAAAATA TTTAATGTAC ATTCAGCCAA AAGAAGATT GGAATAGGAA AGGTCATGGA GATATATTA  
CAGCTAGTTG ATAGGTGTTA AGGAAAAGAG TGGTTATTG ACTGTTTTGT GGCCTCAA AGGTCAGCT AGATCAGTT  
GGTGAGCATT AAAAAACCAT CAAAAACCC TGGAGAGAGG ACCCAGTGCT GAAGAACCCT TTGCCTGCA TGAGACATGA  
GGGAAGTACC AGTGAATGCC ATTGAAAGCA GCATCCCTGG GTCCAAGGGA TGGTCAAAGG ACCACTACCC AACCTTCCC  
TAGCCTACGC CTCCATTACA GATGACCGCA AGATTTATT GCTCAATTGCT GCCAACCAAG GCTGCACTCA CTGCAGTTGC  
TATCAGTTTA TCATGGGTAA AAGGAATGTG CAGTAGAGAA CTAAGTAAT GCCCACCTAC CTCCACAATC CTATCAGGAC  
AAATCACCAT GGCTCACATT TCCTTACATT TGGTAGGTAA GCGCTCTTA CTGTCTGTCA TCTATCTCT ACACAGTTCA  
CCTAACTGT TCTCTCTGA CCAACCTTG ATTTTCATCC CAAATGCTTC CTGCGCATCT CTGGGATTCC TGTCTTCAAC  
ATCACCACAA TCCCTCAAT CTTCAGTTT CTGTTCAAA CTTTCTCTCT ACCTCCTTGCT TTTGTCATTA GCCCGACTGC  
CTCCCTAGGA CATCACTTCC CTGTCAGATC TCTCAAGAT ACAATATTTA TTCTCCACAC AGCACAATCT TCAGGGTTGG  
AAGGCAGGGG CAATCTTCTC CTTTATAATG AGTGGCTCTT ATATATGTTT ATTCTCTGC CCTCTGTAA AACACACACA  
CACACACACA CAAAGAAGAA ATAAATAAC TCTGCTTCT TGAAGCTTGT GACACTGAGA TAAACCATCT CACTGTCTCT  
ATTGTAGTGA CTCTCAACT CCTCATGCAA GATTGGCTTT GGCACCTAGT TCCTGATCTT CCTTCCCTG TAAGCACTTC  
TCATAGTCTT ACGGACTTC ACCATCCATG GCAACACCA TACCACAGCC CAGATCTCTA GCTCTCCAAT GACATTTTCC  
TCCAACTAGC TTGAGTACC TCCTTCCCTA GGCACAGCTC CAACCTGAC AACACCTAAG ACTGTACCGT CTCTAAAGTC  
ACATGTTCAA ACACTTCACT CTTTAAACCAC TGTCTCTAT TCTTGCAAGT GTATTGCTCA AGTATCTCAT TGCAATGCTT  
TTTACTTCTA CCTCATGAA CCTCCAGGCC ATTAACATT TCCTTATTTT TAACCATCAG GTTCTCTCTT ACTTGTGTTG  
TTGTTTATT GTTCTTTTT TTTTTTTTTT TTGAGACAG GGTCTCACTC TGTGCCCCG GCTGGAGTGC AGTGGTATGA  
TCTCGGCTCA CTGAGCCTC CATCTCCCTG GTTCAAGTGA TTCTCATGTC TCAGCCTCCC GAGTAGCTGG GACTACAGGT  
GCATGCCACT ACGCCTGGCT AAGATTTTGT ATTTTATTA GAGAAGGGGT TTTGCCATGT TGGCCAAGCT GGTCTCGAAC  
TCCTAACCTC AGGTGATCCA CTGCTCAG CCTCCAAAG TGCTGAGATT ATAGGCATGA GCCACTATGC CCCACCTGGT  
TTCTCTTAT TTATTCAAG TCTATGCTGC ACTATTAATA CTGCTTGAC AAAAATTATA ATAGTGAGAA AATTATGACA  
GTGAAAGAGA TCTGAATAA TCAACCCCA TCTGCTT ACTTCCAGA CTGCCCTTAA TAATCTCTGA GCTTGGGCCA  
AGCTATCTTT GGCAGAAATT TAGTTTATAG TTTAAATGAT AATAGCCCTT CTCCAAAAC AAACCTGCTT TGTAAACTA  
ATAAAAGACC ACCAATGAAA GGTTAGGAGG ATGAGAGGAG CCTGAATTCT GCTAAGGTGT AGATGTAAC AATTACCAAC  
TGTTATTCGG GAGGTACAAA GATTGCAAC ATCGCCAAAT ACTCCTGCAG ATAACAGCAC TATCATAGAA TCTGATTGGC  
CTTTGAGAT CTCTTTTCTG ATCTTACAT TTCACTGGT GGCTTACCT GGACCCATCA ACAAGTCTG TGGCTCCACC  
CAGAAGCAGA CTTAACATGC ACAAGGACCA TTTCCACAC CGCTATGATT GCATCCCAAC CAATCAGCAC CAACCATTC  
TCTGCTGCC AAATTATCT TGAAAAATCT TAGCCTAGA ATTTGGGGG AGGCTGATT CAGTAATAAC AAAACCCCGG  
TCTCCCATTT GGCTGGCTCT GCATGAATTA AATTCTTCT CTATTGCAGT TCCCATCTTG ATAAATCACC TTTATCTGGG  
CAGCAACAAA AAGGAACCA TTGGACAGTT ACTCTGTTG CAGATATATC TTGCTTCCAA AATTGGATT TGTTTAATG  
AATTATTCT GTTCTTCTGA TATTTACAAC TGTGAATGTT GTGCTGAAT TCTCTTATT TCTTGTGAA AAGAACTATA  
TTGCTACAGC CAGTACATAC AGATGGATAG CTAATTACTC AACACGGGGG GATGTGACCA TCACCGCACT GTGCAATGA  
ATGTTACCCA TTGTCACCTT TTCCAAAAC ACATAGTGT ATATGGTATA TGACCCAATC AACGGTGGCA AAGCTCCAGA  
AATACCACAT AGACATCAGG GACACTTTAA ACTAATCAGC CTATAGTCTT TTTTCAGTAA TTCCAAAAC TGGTTGTGCA  
TCCAACTCAC TTGGTAACAT TAAAAAACA AAAAAACAT CACGCAACAT TCGCTCCAA TCTCATGAA TCTAGATATT  
TTGGGTTGGT TCAGGAACAT TCAGGAGTTT TTCAGGTTCC AAGGTTTATA TAATTGAGG TCTCTCTTG AGAAAAGGAA  
CGTAAAAGCG TCTGCTTTT ATAGATCTTA CAAAGATGTA TTACCATGTA AACACATTCC TAGGACCCAG GCCCTGTAA  
TTTTAAGGTT TATCTAAGTA ATGGGCCCTG AAGCTTAATT TTCATTATCT TCAGGGCAAA TTACCTGTGG GTTAGGGTTT  
AGGAATATAT CTCTCTGTG ATGTGTGTGC ACATTAGCAT GTACGCTGT GTGGATTITT TTTTTTTTTT TTTTTTTC  
TGAGACAGAG TCTCGCTCTG TCGCCAGGCT GGAGTGCAGT GGCGTGATCT CTGCTCACTG CAACTCCGC CTCCAGGCT  
CAAGCGATTCT TTCTGCTCA GCCTCTTGAG TAGCTGGGAC TATAGGCACG CACCACTATG CCCAGCTAAT TTTGTATTT  
TTAGTAGAGT TGGGTTTTCG CCATGTTGGC CAGGATGGTC TTGATCTCTT GACCTCGTGA TCCACCCGCC TCCACTCCC  
AAAGTGCTGG GATTACAGGC GTGAGTCACC ATGCCAGCA CTGTGTGGA TGTTTAAGC TCCAGGTGA GTGAATACA  
AACTAGATCT TTCCCTCTG TAGCATCTGT ACTGTTTACT CTATGCATCT CAATATTTT TCTTTAGTA TTTCTCTT  
TTCTCTCTA TACTTCTCT TGTGCTATT TTTACCTC CTTTTTAAA AAATTTTTT CTTTTTATTT CTATTGACCT  
TTAGCCCTCA CAATGATTCC TACAAGCCCC ATTTCTGTAA ATGGGGATTG AAATAATTGC TGGACTTTTG AGAGATAGAT  
ATATTAATTT GCAAACTGGC AGTAGTGGG GCAGTTGATA CATAACTAGG TTTTAAAGT TAGCCTCTG AGACCACTCA  
TTCCATTTGT GAAAAGTAT TCTACTTCTT ATTAGTAGCC AAAATATGCA TTCAITCACC CATGCATTGA TTTATTCAIT  
CAATAAATAT TTGTTGGATG TCCACTCTGT ATCAGGAATG TGCTAGGTTT TGGGAATACA GCAATGAACA AGGTAATTTT  
TCCCTACCCC TAAGGAACCT AGAGTTTATG GGGGAAGACA GACATTAAAC AAACAATTGT GCAAGTAATA ATCTATAATT  
ATTTATTACA ATTAAGGAA GGAAGAGACA TTGGATTAT GAGGCAATTA AAGAGGAGAC CTAGTGTAGG TAGCCAGTTC  
TCGTGAAGGG ACATGTATTA GTTGGAGTTC TCCAGAGAAA CAGAACCAAT GGTGTGTGTG TGTGTGTGTG CGTGTGTGCG  
TGTGTGTGTG GGGGTGTGGG GGTGTGGTAT TTTTATAGA AATTGTCTCA CACAATTATG GAAGCTGAGA AGTCCCAGT  
CCTGCTGTCT ACGAGCTGAG AACCAGGAAA GCCAGTGGA TACTTCAAAG TCCAAAGGCC CTGGAACCA GAGTGCCAGT  
GTTGGAAGGC AGGAGAAGAT GGGGTGCCCC GCTTAAAAAG ACAGTGAATT CACTTTTTT GCTCTACATA GGGCCTCAAT  
GGGTGGATC ATGGCCACCC ACATTGGTGA AGGCAATCTT CTAGTCTCT CAATTAATAA CTAATCTCTT TGGAAATACT  
CTCACAGACA CACTGAGAAA TAAATGTTTA TCAGGCTGAT AGAAATCTTC TGGAGTTAA CAATGTGTAT AGCTGTACAA



TCACATACAT TTTTAAAGGG TGCCTTTTAT GGAAAGTGAG TTTTATCTAA ATAAAATTTT TAAGAAAGAG ACTTAACACA  
GAGATAAACA TAAGCACATT TATTGTCAAC CTTTATAGTG TTATGTCAAA TAGGTCTGAC ATAAGCTTAA ATAAATATAT  
ACTTTAAAAA TTATAAATA TTTTAAGTTA TAATTAAAA TTCTCAATAA AACTCAAAAC CAAACACAC TGTTATTCA  
CACAGCTAAT TTCTAATGCA GTTTACATAA ATATTTACAA CTTCTAAACA ATTTCAAAGA AAATAACACT GTATTCCATA  
CATAGCCTGA TCACAGTAGT TGTCTCTCT TATTTCCAG AGTTTTCTG CCCCTTTAAA AGAACCTCTG CTGTCTGAT  
CCTTATCACA TCTCTGTTT GACTGTTGGC TTTGTTGTTG CCAGTGTTC GCCAGAACTT CTCTGAAACT TTTTTCAC  
CACATGCTAA GTTAATGGAA GTGTAGGAGA GTTTGATTC TCACACTCT CAAGGCTAGA GCAGCTTTGG CAATTACTGA  
CTGAGAATTT TTCAATGCCA GTGATCAACT GAAACTGGA GATTCTTTG GAATTGTTAA ATCTGCTTAT AAATAACAT  
AAATGCTTGC TCACACAGGC ATTCCTCTCT TCCAGAGCAC CCTAACATAC AGAAGAAAAC AAATAGGGAA TAATATTAG  
ACATCTTCAT TCGTTAAAAA TCTACCAGAT GACTCTTTA CATGGTGAGT TTCTATTGTG AATTTAAAAA CTTCATAAT  
ATACAAGAAAT TATGTTTACA TATCATATCT GACAAACATC TTTGTAGGAA TGCAAAAGCAC ATCCATCTTT CTGTATTCT  
TTCCAACAAA GACATTCATA AAATTATACC TTTGTGTGTT TGCATTTATG CTTTATTAG TTCAAAACGT TTGGCCTCAT  
GGAAGTTTTT CATCGTGGA ACCACATATT TCTGAAAAA TATCTGACAA TATACAAAAC TTCCATTAG TTTTACTCT  
CCAATTCTAC CATGTTTTCA AAAACAACT GTAGTAAAAA CACTCAGAAC TTTATTCTGG TTAACATCAT GCCTTGCTAG  
GGGACAATAG TTTCCCTTTT TGAATAAAT TTAACACAGA TGTAACATAA TTTGTTAATA AACAAAGAGG GGGTAATCTA  
GAATAAGTAA TATTTACCAT ATCATAGTTG ACAGCAATTA TAAGCTTTT AAGTCCCTAC CACACTTGTA TTGAATGAAG  
AAGTATGGAA GATTATAATA TATTCAATGC AAGTAAAAAT ATCACAATCC TTAAGAACTC TTTAAGAACTC TTAAGTCCC  
ATAGGGATGA AAGTGATTAA ATTGTGCATA GTAACCTCG CACAGAGCAT TCAGTAGGAT TTGCACCATT AACAACCTC  
CATGCATTG CCGTGGGCA TTCAACATCT GTCATTTTT TAAGTTATAA TATTTTATG CATTTTTTC CTCTAAACTC  
TGGATAATTA TTATTCATT TATGACAGC AACTGTGTA TCAGTGTG AAACACTGTG AAGGGCAAAA GAAAGAAAGC  
CACAAAATAT TGTGTTTCTG TGCCAAGATT TTACAGCGAG CAGGGGAGAG TTAGAAAAGG AATCTGAGA TTTAGAGTC  
TTGGTCTCTT CACCTTGTG TGAAGAAAA TATCCTTCC CTTTATTAG CAACACTTTC TTGATCTGA GAGTAGGAAA  
GGGAACACTG AGTCTTTTCA GTTGAAGGCC GTCTTGTCT GCTGGACTTT GATCTATTGA AGTGGTGATG GGTGTGCGG  
TTTCAGCCTT AAAGGCATCT GGCATAGTG CCAAGAGGG CCAGAGACCC GAGGAGAGTT ATCTGTCTCT GTTAACCTTA  
GTGTATCCCT CTAGTTCCCC AGATGCACCT GTTCTGTAA ATATAAATCAT GCATGTCATC AGAACACTTA TTTAGTTCGA  
TACTGATCAT GACAACAAAA TGTACCTTCT AACACAGACA CTCTCACTAG GATAGACCAT GTAGGAACAT CGAATTCTAT  
TCAGTTAGGA CAGTGATGAT GTCTACATAT TATACCTCTG TCAAAACCTA CAGAATATAC AACACAGCAC AGAGTGAATT  
CTAATGTAGC CTGTGGACAT TAATGAATAA TAATGTATCA ATATTGGCC ATCAGTTGA ACTAATAT AAGATGTTAA  
TAACAGGGGG AATTGAAGGG GTGGTGGGA GATAGTTGG AACTTCTGT GCTTCTGTCT CAATTCTCT GTAACTTAA  
AACCAGCAC ACAAAAAAG TATTTTAAAT TTTTAAAAA GTATTAGAG GGACTTGACC TTCCAATTT CTCTCAAGC  
AGGTCCGAGT AGTTAAGAAC ACAATTTTA GAACAGACT GCCAGAGTTT GAATCCTGGC TACACACTT ACTAGCTTTG  
AGATTTCAGA CAATTACTT AACTTCTCT TCTCATTTT TCTCTGTG TGATAAGAA TAAAGTAAAC GGCCAGGCC  
AGTGGCTCAC GCCTGTAATC CCAGCACTT GAGAGGCCAA GCGGGTGGG TCAGGAGTTT AAGTACAGCC TGGCAACAT  
GACGAAAAAA TACAAAATCT CTAATAAAAA TACAAAAAT AGCTGGGTGT GGTGGCAGGC ACCTGTAATC CCAGCTACT  
AGGAGGCTGA GGCAGGAGAA TTGCTTGAAC GCAGGAGGTG GAGGTGCGAG TGAGCCAAGA TCATGCCACT GCACTCCAGT  
CTAGGCAACA GAATGAGCT CCATCTCAAA ATTAAAAAA AAAAAAGTAA AAAGAAAAGA TAAGAAATAT AGTACCAGCC  
CCTATCTCAG AGTTCTAGT TTAGAAAAAT TCCCAAGTA TAATAAGTG AATGTAAAGG TCAGCTATCT TCATTATTAT  
TATCTATCAT AAATGAAAT ACACAATAA GCTAGATCCG TTTCTTCTCT CTCTTCTAC AAAAAATAA GCAACTTTCC  
AGAACAATAC CCAGGTGATG ATTTCTCCCC TGCTCCCTCC CTAAGATATT GGCAAGTTT GAGGGTTCAA GGAGAACAG  
AGCATGTAGA GAAGATACCT CTCTCATAAC CATTTGTGAT TTACAAGTCT TACCTGATTC TTTGAACTT AAAGGATGTA  
AGAAGGCTTT TGGTAGCTTC CATCTGATT AAGGCTTTGG CAGTGCTGT GGAATACATG AGAACACTAT GTAAAGCACT  
GTCTTCCAAC ATGAAGAGAG AAAAATATGT GGAATGTTCA ATGGCATGCT TTGTATAAGA ATGCAACTTA CTGGCAGGA  
ACAAATTTCT TTGCTGCAAA AGAAAAGACA AACAACCATT AATTCAGACT AAATGACTTT TAAGGATATA TTAATCCAG  
ATACAATAG ACTTAATTCA TCAAGTGTG CAAACTCGAT GCTTCAGGCC CTCTGTAATA ATCAGAGCAC AAGCATGGCT  
CTGTGGCATG TAGGTTAAAA TGCAAAAGTG CAAAGCCATC AAAGGCCATA GCAGCTTCT AATGCCAGCA AATAGCTACG  
GGGTATCTT GCCCAATTCA GCTCCCAATT TTTATGAGA AGTCCAAAGT CTTAATTTAA ATGTGAGATT TCTTATTTG  
TAAACGTCAG AACTTAATC AAAAATGTTT TAAGTACTCT TAAACATGTA AGCCAAACAA ACCATGAGTG TAGTCAGATG  
TGCTTCCATA TTCTTATGA GAGACTCTCA AATTTAAGCC TGACTCCAA ATAAATCTCC TTAGGAAGAA TTTTATCCAT  
TTTCTTAGA TGCTCTATCA TGGCAGTTCC ATTGCACAAT TCCGGGAGGC ATCATATAAT TCAACATGAA TAGCACCCCC  
TGGAGTTGTA CAATATTAGG CACGACTAAC ATTTTATTTT CCTCAACAC TTCCACACT GAGTTGTACT ACTAATCTT  
TTCTTAATAC TTCTGCTTAA TTACTGCA TTTTATCCAG ATTCTAATTA TTGTTTAAAT CAGTAAGCAA GACCATGACT  
TATCAATGAG AAAGAAATGT ATTTTCAAAA ACATTTTGA AGTACATTA TAACTTCTT CACCTTCCG TAAGCATTTT  
CGAAGCCAGA GGAGAAATGG TGCTAATGTC AGGAGGGAGA GTCCAGCAGC AGAAAGTCCA GCTACCAAGG GAATGTTGGA  
CTCAGTGGGA GCTAAGGAAG TAAGAGACGA AGAAAGGTCA TGAGGAAGAA TTGATGTTAA AGTCTCTCCG TCTGTCTCT  
TTGGCCTTTT TCTGTACAT TCATTACTAG GAGCAGAAGA GCTATCTAGT TTAATACAAG AAGCAGAGAT GTGGCATTAC  
AGGCCTTTGA GATCTGCTCC AAGCCACCTT TGAAGCTATT TCCACCATG GCAGGCAGAA CTCTAATCTG CCAAGCTCGT  
TCACAATACC ACACACACC TTGTTAATA AACACTGCAC TTGCTTGTCT TCTGTCTCT ACTCCCTCTT GTTTTCCATT  
TCCCCTTTCT CTCTCTCTCT CTCTGTCTCC TTTTCCAGT TGTCAAGATT CTACCCTTC CATCAACATG CACTTCTGT  
TTTTCTCTA TCCCATACA ACTTAATATT CACAACCTGT CAACCTGGG GAACCTTCTG GTTTGGATAT AATGAATAGT  
TGATTACTGT AACAAGATAG CTCCCCCTT TTCTTTTAA TCACCAGACA ACCACCATCA ATCAATGCAT CACCTTCACA  
GTAGGTAGC AGGCCAGAG AGGTCTCTGT GGCTCCCAT GTCCGAGCTG CAGAGCCATT GAGCGTCCAT CCTTCAGGAC  
AGGCGAATTT GCACACAGT CCAAAACAGG GCTCCCCACT GCTCATG TTGATCTTTC CCGGAACTGC CAGGCTTGAA  
CATTTTACCA CTGCAATGT TAGGTACACA GGCAGAGTTT CAGAAAAATC TACTGAAAAA CTTCAAAAA TGCTTAAAAA  
GTCAACAATG AATGTAAGT GTAAGCGCTA CTTAGTTTTC AGCATGTAGG AAATTAGGAC CAAACCCCTT TGGGGCAATC  
TAGGTTTCA AACTTTATGA AGTATTTGAC CTGTACCCTA AAAAAGTCTG CACTCAATTC TACCTTGGCA GGAAGGAACC  
TCTTGTCTT ATGTGCTG AGATGTGCAC TCAAGTTGAG TTGATCCATG TAATTCAAT CCTCCTCAC AGTGAAGGC  
ACAAGAGGAC TTGTAGGTGA ATTCTCCAAT AGGGGAATGA GCACACCTCA CCAAAACCTT CCGGGGCTGG TGGACGAT  
CGCATCTAC AGCTGGAACA CACGAGAGAG CACTTAGAA GTTTGTTTGC ATCTCCAGCA ATACGTTTCC CAAGGTAACC  
AAGTTCCCAA GCTCTTCAAT AGTCTTTTT ATCTTAAAAA AAAATAAAAA CAAAGACTGT ACCTTCACAT GTGGGCTTCT  
CGTTGTCCA CTCCCTGTG GGGCCACATT GGAGCCTTTT GGATCCCTT AACACAAAAC CCGCTCACA GGAGAATCA  
CAGCTGGACC CATAACGGAA ACTGCCAGAA GACCTAGGAA GACAATTCAT GTAGCTCGC TCGGGGTGG ACAAGGCTGT  
GCACTGAAA GCTGAGACAT CAAAATGATG GTCAGAAAA ATTGCAGTGG AACTAGAGAG TACTTGGCGT TTGTGAGTG  
AACCAGTTT ATTCAAGCAA CACTTGGAGA ACTGAAGATT CTTTATAATT CCTTGGACAA ATGGGAAGAT GGCTGTGTTT  
TCTTTGAATT TCAGCCCCCT CACTGATCAT GGCATAATT AAAAGACTAA TTAATCAGAA CATTAGTTCC TGAGCACTGT  
TCTTCTAACA CAAAAATAA ATTATGGTCC AAGGAAGAT TTACCGCAGT CTGAGGACAA CATATGGGTG ATGGATGTTT  
ATAGATGGTG CAAAAAGAA AGAAAAGAAA GCACCCTAT AAAATTTGTC TGTTTTGCAG TTTGTTTGTGTT

TTGCTACTGG AAATCATTCT GTGCTGGCTT TGGCTAGGAC AAGGCCAGTG CCTGATAGTA AAAACTGCTT GTTTTCAATA  
TCCTTGCTCT CACTTTAAAG TGAATTAATA TTTACTGCTT ATATATGCAT CAATACTATC TCTGTAGCTG ACACCATGCT  
TGAAACAGTG TCATCACTGC TAATTATGAG CCATTTTACA AGACAGGCTG GATGAGAGTT TTACATTTAA ATCATGTTCT  
CATTATTCTG TTTCCGAAT TTTCTAATAT GATTCTTTA GATTAAGAAT TCTGTCTATT CCATGCTAAT GTCTACAAAG  
TTTTATCAGC ACATCACAGT TAAAAAAGAA CAGCAAAGAA TTCATTCTTA ACACATATGA TCCTTTCCCT GGCCAAACAT  
TAGTTCTTTT AAATGAATCT CAAAGATACG AGGGTGTGCT ATCAAATCTG ATTTCTATAG TTAAAGTGGG TATTGGTTTT  
TTTTTTCACT GTCCAAGTTT GAAGATGGTT GTTCTTTAAG AAAGTATAAA TCGAAGGATC TCAAGCTTAC CTTCACAAAC  
TGGGATTTCG TGTGTCCACT GCCCTTGAGT GGTGCATTCA ACCTGGGCTG GTCCCTGCAA CATGAAGCCT TCCTCAGAG  
TGAAGTTGCA GGATGATTGG AAGGTGAAC TCTCCAGAG GGAATGGCTG CACCTCACAG AGCCATTCTG AGGCTGGCGG  
ACGGCCCTGC ATGTCACAGC TGTAACAAAT ATACGCATTG ATATTAGCAC GGCCTAGAAT TAGCTTGCCC ATTTCCAGTA  
TGGGTTGAGA GAAAGAATGT TCACAGTAAG TCTCCATGTG GAACAACCTT ACCTTTACAC GTTGGCTTCT CGTGTGCCA  
ATTTCCAGAT GAGGTACACT GAAGGCTCTG GGCTCCCAT AGTTCAAATC CTCTTCACA GTCAAATGTA CAGGTTGTGT  
TCCATGGGAA GCTTCCAGGG TTTTGAAAC ATTCACGAA CCTATTGGCT GGATTGTGTA CAGCATCACA CTCACCACT  
GAGGATTTTA AAGAGCAGCA TGAATTTTAC AGAAGAATGA TCTTTTCACT TCCTATTGAG CTGGGTGCTT AACAGAGTGA  
GGAAGCTGCC TTCAAAGGGT AGATCCCAAA GTCCTATGTC AATTCTTAGG GACATGCACA GCCAGAATAA AAGCTTTTAT  
TCTTTTCACT GGATATTCTA TCTTTTCTGA TTCCACTTT GCCTATGCTG AGTGGTCTCT AATCTATGTT ATCATTTACG  
TGAGGTAAAA ATTTAAAAAA AATAGATTCC AGATTAGGAG TTATGACTAG TACTGACATA CAGTAGGCTAT TCAATTTAT  
TAGCCCATCA GAGCCTGAAG AACTGATTTT TCTTTTTTGG GCCTCTGGTT CAGAAAAGATA AAATTAAGAG AGAAAAAGAG  
ATACTAAGAC TGCTTGACTA TCATGGTCTT AAGTTAGTCC CATGGCTTGG AAAAGTTAAA CAGGGAAACA AGATGAGAAA  
TCCATTGAGA TTCTAGAGC TTTATTGTTT TATGGTCTCC CTCAAAATC ACCAGAGCCT CAGAAACACC CATTTCAGG  
ATAGAATAAA AAAACCTCTC TCAACCAAG CAGGTAGGAG GTTGGCAATA TACATTGGCT GAGAGAACA ATGTATTAA  
AAACAAAAAC AAAAAAAGAA CTTCCTCTGA AGTTTTGAAA ATGTAAGTTG AATCAAAAAA CAGAAGCAAT GAGGGATGAG  
TTACAGAACG TTCTGTGCAT TCTCAGAGGG ATTTACCATT GCAGGCTGGA ATAGGAGCAC TCCATTCTCC AGAGGACATA  
CACTGCATGG TCTCCATGCT GCTTGGCAGG TAACCCCTAT CACAGCTGAT AGAGCAGGAA GAATTGTAGG TGAAGTTTCC  
CAGTGGGTGA GTGCAACCA GCTTCCATG CTCAGGGAT TCCAGGCTG TACAGTTCAC AACTGAAAAA GAAACCCAAA  
TCAGTTCTGC TCATCTCTCA CCTTTAAGAG ATAAAGACAC TGGAACTAG AACTACAGTT TGGTTTTT TTTTTTAGT  
TTAAAAATTT ATAAAAATTC TAATGGAATT TGTAAGATTG ACTGTAATTC TACCCCTTTT CTTTTATTCA AGAAAATGCT  
GATCCATAAC AACAAACA AAAAAGCAGT GATGACAACC ATAAAAAGA AATATTGAGT GATATGGGGA GAGTAGTGTA  
ATTGTGTTTA TCTCAAACT GTTCAAAATTA TATGAAAAA CACAGCAAACT TTAGGTACCA CAACAAATTT CTGTACTT  
TTCTCACAAC GCTAAAAAT ACTACAGTAA GCTTCAACCT AGGATGAGAA CCATTACAAA CAGTATATT CAAATTTAAG  
TACTAGAATA CATTACAAAT TTTAAAACCC TAATGCTGCA CTGTCTACTA TAGTAGCCAC TATCTGTGTG GCTACTCAA  
TTTAAACTTG AATTCGTTGA AATCAAAATA CATTAAAAAT TCAGTTCTCT AGTGTACCA GCCACATTTC AAGTACTCAA  
TAACCATGAT TGGCTCATG GTACACACTG GAAACCAAG CTATGGAACA TTTCCATTAT CAAAAAGCT CTACTGCACA  
ACGCTGTGCT AAGGAATCTT GGAGAGAAGC TAAATCAACT CTCTTAATGT ACAAATTTAG GAACTGAGAC CTCATTTCAT  
TCAAGTGACT TGCTCCATGC TACACGGCTA GTCATTACAG AGCCAGAGGC CAGAGCATGA ACCAAGATAC CCTGGACTCT  
GTAACCTACT CATTTCTACT GCAACGCTT GTTACCACCT AGATGAGGTG AGTACATGTT CCTCGCAGGG ACACAGAAAT  
ACAGTTTAT GAATGTGCTC TGTGTGCCAG GCACCATGTA ACCATGAGCC TATGAAGTTC ACATATTAT TATCTCAT  
TTAGATGAG AAAATGACA TAGAGGTTA AACTATCTG TCAAGGTGCC AAAATAAATA ACTGGTGAAT CTAGGCTCA  
AACCAGCAG GGTCTGACTT CATAGTCTCA GCTCAGGATC ACCATATGAC ACCATCTGCA CCAGGGAAGG GAAGGCATGC  
AGACCTGACT CTAATGCCAG CTAGGACGTG AGATGGTGTG ACCATCTCAA GTGAAGAAAG AGGCAAGAAC CAGACTTACT  
TTGCTCACAC TTGAGTCCAC TGAAGCCAGG GTCACACTTG CAAGTGTAAT TATTGATGGT CTCTACACAT TCACCGTGGC  
CACTGCAGGA TGTATTGGTA CAGGCAGCTA CGGAAATAT AAAGCATGAT GAGGAGGACT ATTACTGTGC TTATCTGAG  
TGCTTTGAT TTTAGAATCA ACAGTGTGCA ACAGAGACAT CAGCAGTCTT ACAGAGTGCC ATAGACTTTA ACTGAAGTGT  
TTTACAAAGT TCCAAATCTG AGTTTCAGGC CCACCTATCC TAAACCTTGA TGCTAATGTA TAGCTGTGGC TGGCACCTAC  
CGTAGAAAA TTTACTTCTT ACAAACCTCTG AAGACAGTTC CCTACCACA AATAAACAAAG TAATTAATAT ATGTATTGTG  
TGTGTGCTT TTTATGTA AAGAACTACA TATTTGCTA CAGTATTAT ATATATTTA TATATATACA TACACACATA  
TATGTGTGTA TATGTGTGTA TGTATATATA TAAATGTAT ATAAATGCTG TAGGCTATAT ATATATACAC ACACACATAT  
ATGTGTGTGT GTATATATGT GTGTGTGTGT ATATATATAC ATATCCACAT ATTCTGCCC ACATTACAC AAAACAGCAA  
AAGAGAGAAA CTTAGCAGT TAAACAGAAT CTTTTGAAC ATAAATAGAC CACAATAGAG AGCAGTTTTT GCATGCTGTA  
AATTTGCCAA GATGCCACA CACTGAACT ACCTCCACT GCTGCCGCA ACTCCCTACC TGTGTAGCAT AGGGCAAGCT  
TCTTCTGCT GCACCTCTCA TCACTCCACA TGCCCACTC TTTTCTCTC TTGATGTAGA TCTCCACGCA GTCCCTACTC  
TTTTGCTAT TGTGGGTTT ACCTGGAGCC CAGTCTTGG CTCTCTCTGT CAGAGGTTT TGGGTTCTTA CCCAGACCA  
CACATTGTT ACTTTTCTGA TTCCAATCCA GTAATAACTT GGTGAATAGC TCAATATGGA GTTTAGGTAC TCAATCTCT  
CTTTGTTTT AATTGCAACC AGGTGTGTGT ACCTTTGCTG ACAAATAGCA CTGGCCTCAT CATAAGTCT AGCTTCCGTG  
GAGGTGTGT AAGACAGGC TCCACTCTT TTAATGAGAA GCAGTAGTGG GAGAAAAAGA AAAGAATATG TTAGGTTTGG  
TACTGTGTG GTTAACTCT GACAAGTGT CTTTTTATTG TCTTATTTT GGCAATGTT GTGACATGGC CCAGACTTTT  
CTCATCTTT CAAAAGTAAG AAGTACGTAT GAAGAAACAG CGACTTATTG TTTATCTCT TGTGACTGC CACCACTAG  
GTACCTTAT CACTCACT CACAACATTA TAGTATACCC ATTTTGTAGT AGAATAATA TCAGAATAAC TAAGCTTAT  
TGAGCACTTA GTATGCACCA AGAAGCACTG TATGAGGTAC TTTCCATGAA CCATGCTATT GAATCCTCAC AATGCATCTG  
GGAAATAGGT CATTATGAT CACTTTTAC ACTTAAGGAA AGGGAGACAC CAAGAGGTAA AGTAAATGAC CCCAAGCCCA  
GGGAAGAAC CATTGCAGGT AGAGGTCAAG GATGCTGCCA GATATCCTGT GCAGGACAGC CCCAGACAAG CAAGGATATT  
TCAGTCTGAA ATATCTATAG TGCGAGAATG AGAAATCTGT GTCTAATGGC ACTGACTTAC CCAAAGTGAG AGCTGAGAGA  
AACTGTGAAG CAATCATGAC TTCAAGAGTT CTTTTCAACC AAAGTTTATG GCTTGAATA CTTCCTGGG GAGATAAAAC  
ACAAAATGAA TTAAGAAGG AAATCGTGGG TAGCTAGTTA CATTATTCTA CCATGATGTT TAAGGCAGCA TCCTAAGATT  
TTGGGCAAG GACACTAGTG CAATAATCTT TATTTAGAG TTTAATCAAA TAAATAACA AATTTAAGA CTTCATTAT  
TTAGGTCAA GAGAAAAGAG AGGTTTTAGC TACAATACAA TAAGAGCTTG TACAGATGTG GTTTTTATTA GAAGGCCTTT  
TGATATCTG TGTTCATGG CCCAGGCTG CCCTTATAA GCGTCTGCA CTACCGTTT TGGGAAGCAG TTGTTCAAC  
ACAGGATCTC TCAGGTGGGT ATCACTGCTG CCTGTGCTC AGTCAAGTAT AGGAGTTTTG ATGTGAAGTC AGCCAAGAAC  
AGCTGAACAC TACTCGGCT GAGGCCCTT TATAGGAGG ATTGCTTCT GTGAATAA GGAGGATATT GTCCACATCC  
AGTAAAGAG AAATCCCAA TGGCATCAA AAACCTTCCC GGAATATCC ACGATGCTTA AAATTACAT GATGTCAGAA  
ACTCTGCTC TTGAAGCTAC TTCACCTTT TCCATGCTT TATATCGTAT ATGCAATTTT ATTAATATGA CAAAATGCA  
TGATTTTAA TTATAATAAC ATAAAGTCTA TGTCTTTAAA AAGTTGTAAA ACTTTGCTG TTAGTAGTGT CTCTCATGTA  
GTTGTGGTAG TAATTAGAAT TTCAGAAACA GAAGGAAACC AAGAATAGGT TTGTCATCCA TAGTCTACTA CTTCATTT  
CTCATTCATA GCTGTGGATA ACCAATCACT ACTCATTTT TCTTCTTTT TCACCTGCCA ATTCACATA TTTAATGTC  
ACTGTCTCAC AGAGGAATGA CTCACAAGGT AGATATTAAT CTTCAGATT TGCACGGCAG TTATGCCATA ATTAATAAT  
TATCTAAAAA TAATATCTAA CACTCAATG GTTAAAAA TGCCTTATT TAAAAAAGA AAAATGGGAA ATAGATATT

ACATCTGGGA AAGTTTCATG GTTTGTTTTCAG TGAaaaaaaat AAAAAGGAGG CCAGGCACAG TGGCTCACGC CTGTAATCCC  
ACCACTTTGG GAGGCCGAGG CAGGCCGATC ACCTGAGGCC GGGAGTTCAA GACCAGCCTG ACCAATATGG AGAAACGCCA  
TCTCTACTAA AAATACAAAA TTAGCTGGGC ATGGTGGCCG ATGCCTGTAA TCCCAGTCA TCGGGAGGCT GAGGCAGGAG  
AATCGCTTGA ACCCGGGAAG TGGAGGTTGC AAGTAGCCCA GATCAGGCCA GTGCACTCCA CCGTGGGAAA CGAGTGAAC  
TCTGTCTTAA AAAAAAAAAA AAAAAAGAA AAGAAAAAGAA AAAAAATAAA ACGGAAAACT ATATATATAT ATTTAATTGG  
TCAAAATTTT GTTTAAATTT TTTGAAATGT TAATGTGCAA AGAATAAAAA TTCTCCACA ATGTTAACAG TGAATAACTC  
TGGATGGCAG GATTGGGGAT AATTTTATA TCCTTCATTA TTATTTTCAG GATTITAAAG TTTTITCAA TTTCCCTTTT  
TTTACCTTT ATAGTAACAA GAATACAGTT TAAAGAACT TGCTCTAGG CCAGGCATGA TGGCTCATGC CTGTAATCCC  
AGCACTTTGG GAGGCTGAGG TGGGTGGATC ACCTGAGGTC AGGAGTTCCA GACCAGCTG GCCAATATGG TGAACCCTG  
TCTCTACTAA AAATACAAAA ATTAGCCGGG GTGTAGTGGC GCATGCCTGT AATCCCAGCT ACTGGGGAGC CTGATGCAAG  
AGAATCGCT GAACCCAGGA GGCAGAGGTT GCAGTGAGCT GAAATCACAC CATTGCACTC CAGCTGGGC GACAGAGCAA  
GACTCCATCT CAAAAAAGAA GAAAAAAGA AAAAGAAAAA AAAAGAAAT TGTTCCAA TGCAACAGAA GGAGATGTAT  
GTGGTATCCT ATATTCCTGC TCTTCATTTT GACATTTCT CTGGGTGATT GTATACATTC CCCATCTCTG CATCTTACCC  
TATCTAAATG ATGTAACAG TAAATGGGGA TCATTTTAAT TTCCATATTC TGTAGGTTTT CAGAGCTCAA GTCAAGCTAA  
TATTCTATAT CTACAGCCTT TCAAAATAGG AGGTCTATCT AAAAATGTAC TGTCAGCAGA CCTGAACGAG TAGTGGTAAA  
AGCCTCGITT TCTCTTTT TGTAGCAC TGGTCTTCT GTGTTCATAA AGATGTCAAG ACCCAAAAAA AAAACAAGAA  
AAGAGAAGAA AAATTCACAA AAGACAACCT GATTAGAAAA AAATAACCTA ATTAACGAAT TTAATCAAC CCTATCAAA  
AAGCATAGAA TTTATTCCT CCACCTTACC ACTCTCTTAC ATGATCCAGA TACTGACATT ATTCCAATTC TTTATCCAC  
TTTACTTAGC TCAATGTGGT TGTGCTTCA ATAAATTCAG AAGAGTAATC ACTCATATAG TGTATTATTA GATTITAGGG  
CAGAATGCA AGTTGGTTA ATACATTATC TGTATGTATT TTATTTTAA TAAAGTATGA ATACATAATC TGCTATTTT  
AAAAAGCATG GTCAAAATGA TAGAGTAGCC AAATCTTAAA AAACAATTTA TCTTCGATAT CAATAAATGA CCTAATAAT  
ATATTGCTAA TAGAAATTAG TCGTTAACAT CCTAGATAA CTAACCTTAT TATTGCGAAT TTTTCATAAC TAAGTTTATA  
GTTTATCTCT TCCCCTTTT AAAATTAGTT CAAAGATATC TAAAAATAGC CCCAGTGGTG ATGAAGTTT TATTTTACTT  
ACATATATAT TCTCTGGACC CCAATTATA ATCTCTAACA TTTATTGAGT GCTTACTATG TGCCAGGCCA TATTCTGAGC  
ATTTGTATG TTCACCTATT GATTATTCAA TCCGTACAA AGCCTATGAA ATAGGTACTC CTATTATCCC CATTTTACAG  
ATGAGGAAAT TGAGAATCTG GGGATTTTAT CTCATTCAAA AGCACAGAGC TAAGGGTTGA AACCAGGCAG TTGATATCCA  
GAGCCCACTC CTTTACCTGC TACTCCAAC CATGATTCT TTTGTTGTTA TGCCCGAGA TTCCTGTTC TACCCAAGTT  
TCTGTACTC TCTTGCCCT CTCTCTCTG AGACATCCTT GACCATCACA GCTCTCCACT GAGATAACTG TGTCTGGGT  
TCTGAGACAT TGGGGCTGGA AGGGACCCCA GGCAGATGTA GCAGTAGGGA GAGGATGCAG TGAGAACAGA CCTGGATCC  
CCGGTGCATA GGCAGGGAGA AAGTGGGACA AGGAAAAAAC AAGCAAGGCA GGTGGAGCCA TGCCTAGGTA AAGTTGATCC  
CTAAGCCACA GTTCCAGAA GTTCTGATT CAAAGCAAA TTTTCTTAA GGTCAAAGGG CAACTGATT ATTCTAAAT  
CTAAATGAT TATTCTAAA TTGAGAAAGC TTCAGGGAGA GATCCCAATA TTCGAAGGAT AAGAGAAATG AGGAGTGGAA  
GAGATGGTG AGTTAACAGTA ACTTAAATGT AGACTATATA TAATATATAA TATATGTAGA GTATATATAT ATAATTACAA  
TATATTATAT ATGTGGAATA TATATATTAT TTATATATAT TTATATATAT TATATATATA GATATTTTAT TATTATATAT  
ATAAATATAG ATATTTTAT ATTTTATATA TAAATATAGA TATTTTATA TATATTATAT ATAAATATAT GTAAATACT  
GTGAAAGAAG AATAGAATCT TGAGACCTCA AATTCACAT GCCAAAGGGA AAGTTAAGCT TGGGAAATGA GTCATGCAAA  
AGTGCCTTC CTTTGTTC CAAATACCTG TAATTTTACA TGCTTACTT ATCTTATATA AAATGTAGAT GTACTGAGCA  
TGAGATCCAT GCATAATTC CTTCTAGTCC CTTCTTTT CATGTACCT GTAGACTCAC TGAGTGTAC AGAGCTTGC  
CACAATGTAA ACATTGTCT CATTGCCAAC CCATCTTTCG TTTATTTCT TCCCCTCTG CTTGCTCTT CCCCTCTAAA  
GATGGAAGTT CCAAAAACCT TCTTGGAAG AAGCGCAGGT CACAGATCCT ACAGTGATT GTGTTCTTT TACCTGGGAC  
AAAAATAACC TCTAATCTGT TGAGATATGC TTCAGTTACT TTTGGTTT CAATATGTAC ATGTATGTAT ATAATTATA  
TGTATATAAT ATATGTACTT GTTTAATCA GAGGTATGTT ATTCAAATC CATTATCCT TACAATTACC TGACTTCTC  
CACAGTATTT TCTGTGCTCC TGCCCCGAG GTTGTCACTG CAAATCAGGT ACATGGATAC TGGGAGCTGA TGGGCTCCCC  
TCTGGCTACC TGGGCTGCTG AAGGGGCCAT AGACAGACCC AGCTTCTCTC TCGTGGAGAG GCCCTGGGCC AGCGTGCCT  
GGGAGTGGGA TTACAACCAG ACTATAGCTT CTTACCTGC TTTTCTCTAT CAGGATTTCA TAAGAGGCAA TTGCTGTGTT  
TTTGAGGGTG GGGGCAATC AGGGGAGTT GAAGAGGAAA TTGGTAAGT TGGGCATGT GAATATTATG  
AATATCATCT CCTCTTCAA ATAATCCAAA ATATACCCCC AAGAAACAGG CTGATTAGAG GTGCTTCAAG GCTCCACTGA  
ATCTCCCAAG CTCTGAAGAT GTAGCTAGCT GTTACCGGAT TGCCGGTTT CAAGCCTCGC CTCACATGGA CCTCTTGGC  
AGTTTCTCGC ATGGGGGAAG CATCCGCTAC ATAGATGGGA ATGAAAGAG GAAAGAAGAC GGTGCAACT CAGGCACACC  
CCGGTGTCTG CCACAGTGC TATTAACTCT CTGAGGTGTC ACCCTCTCTG GCTTTATTGT CTCTCTCGG AAGTCTCTG  
TCTCTCTCT CACACCTTT AATCAGGCAT CAAAGACTTT AACCAGTTT GCTGTGTGCC CAGGCCACT CATCTCACT  
TTTATGGCAA AGGGAGTGGG AGACAGAGAG ATAGCCAGAA AGAAGAGATT GGGGACCCCA AGACAAATGT TAGAATTTTA  
ACCAAGGCCA CCTGTGGAC AGGAGATTAT TGGGTTTGT GGAAGCAGC ACTGGCCACA ACCACAGCTG GCAAAAGCAT  
CTATCGAGGA GTGAAGTTAT ATTTGGTGA TGTACCGGG AAGCAGGGG AGTGGTGTCC TCTCGCTTC CTGAGGCAT  
CTGTCCCTT ACCTCTGCGA AGGCTTATTT TACCCTGAG TGCTAGTTT TGAAAGCCTT AGTTCCTCT TCCCCATAA  
AAAGCTCTAC TCTGCTAACA TCTAAGTTAC CTTGTCAGAG TCTTAGGTAG AGGGAGGAAA TCCCAATAAA GATTCCACCC  
TATCTGCAAA ATACAACAT GGTATTTCTT GCATTCCCAA AATTGTGAAA GAAATGTGT ATCACCACAG TAGAGAATGG  
CATTTTTGT TTGATCAAAA CCTAAATATA TTTGATGAAA ATGTGTCTGG TTCTAAGTTT ATTTCCAGA AAGCCATGTT  
TACTCACTG GAATTTATAG ACATCTTATA ATATCTGAGT CGAGTAGGAG CTCCGGGCTC TACCTCACTC TTTCTCCCA  
CACCCAGGGG GAAGTGTAGG GTTCTCAGAC TTTAGAATAA AGAGGAATCA CCTGGACAAC TCACCTAAAA TGCACATCTT  
CAGGTCTCAT ACTCAGAGGC TCTGACTCAA CAGGTCTGGG TGGCGCCCAA GAATTTGGGC TTTAAATGAG TATCTCAGAT  
GATTCTAATA CAGAATGTGT AAGATGACCA GATCTATCA CACTTAGATG TATTGGCTA GGGCCACCTA ACTTGGAGAA  
AATGTTAGTA AGACCCCGTG GTTGGTGCTC AGCTATAGT ACCAGAAAT TGATCAAAAT TTAATCTAT TGTGACACT  
CTCTCGGAA CTGGAAGGCC AGAACCCAC TTGTAAGTG CTGGGAAAAT ACAAGGAAAA TTAGGGTGA GTAGCATTTT  
GAATCTTAC ACATGGAAG TAAATGTATA AGAATCTTA CCAATAAAAA AAAAGCAAGA GAGAATAGCT GCTAAAGAAT  
TAACACAAAT ATGTATATAT AGTTATTCT CTTTCTCT CTGATTCCAG AGGACTTTGT AATTCCTA ATTCTTCTG  
AGCTTCCAG ATGATCTGAG ACTTGAATTT TCTATGTGCT TTTGCTTCC TATTGGCAG CATCTTATCT TGAAGTTTCC  
GCTTCTGCT TGGGGACCTA AAACTAACT AATGGGAATT TCTTCAAAAT GAGCAAACTC TGGTAAATTC CCAAAGCGGA  
AGAAACAAGT GAGGATCGGG CTGGTTAATT AAGAGAATTT TTCTGAATG TAGCCAGACT GTTGGCCGAC TGTGTTAAC  
ATGAGGGAAG AAATACCCCT GGATTTTGA AGAGCCCTCT GTTGTGTTT CTTGGCCATT TGTGCTGCT GTTTGTAAAG  
TCAGAAATTT CCTGAAGGAC TATTATTAGC TTGTCTCTA CGTCAGAAAA CTCTGCTCT GGCCACTTTT AAACATATA  
CTGGATTTT ACTGTATTAG AAAATGTAAC AATTACAGAC AGCACTAAAA GGACACCAAA GGCACAAAGAA AATGGGTAAC  
TTTTTTTTT TCCCCAATC TAAATAGGT GATTTTGGAG AAGTAGGAGA AAAACCTGGA TTTTCTAGAT CTCTTTAGAG  
CTCAACAAT GATATAGTTA ATTATGTAAG TCTTTGATAT TTGGAATGA TTGGATTAAC CGGATAACAA TGAATATTTA  
AATACAGTA TTTGGCCAGG AGCAGTGGCT CATGCTGTA ATCCAGCAT TTGGGGAGGC TGAGGCGGGT GGATCACCTA  
AGGCCGGGAG TTCCAGACCA GCTGGCCAA CATGGTGA AA CCCCATCTCT ACTAAAAATA CAAAATTAGC CAGGCTGGT

GGTGCAAGAC TGTAATCCCA GCAACTCGGG AGGCTGAGGC AGGAGAATTG CTTGAACCCG GGAGGCAGAG GTTGCACTGA  
GCCAAGATCA CGCCATTGCA CTCCAGCCTG GGCAACAAGA GCGAAATTCC ATCTCAATAA ATAAATAAAT AAATACAGTG  
ATTTAACAAC AGAGATTTCT ATTTCACTAT AATGAGCTCT GTCACTGGGG CAAGCTTCTT TGCCTCATTA AGTCTCAGAT  
TTCCCGAGAG CTTATTTATT TATACCAAGA GTGCTTTACT ACCGCTCTCT CTAGCTGTGA CATAATATGA CAAAAGGTAT  
AAATATGGGA AAAGGCACTA ATTTATATCA AAGCGTCTCT CGTTTTTCTT TCGTGTGAAG TTTTAGCTA ATAACTCATA  
AGAATATACC ATATTTAGAG TGTTTACTAT GCATGGGCCT GGCACCTCAC ATACATTGCT TCTTACAAAT TTTACAAAGT  
GAAAGGTAGA TATTAATCTC ATTTTATGGA GGACAAGATA GAGATCTGGA GAGGTACAT AACTTGCCAG TGTTTTTTCA  
GTTAATAAAT GGTAGGGTGG AGATTCAATC TGTGTTACTT TAAAGTCCGT GTCCTTTTAT TTGGCTCCAT GCCTACTCAG  
CTCAGGGTCT CCCCAGGGA GTAAACCTTA GTTTTACAT GAGAAAATGT TACAGCAGCC TTCTCGGCTT GCTTACCCCT  
CATCCAGTT TCACGAGCTT AGTGCCTTAG ATCGGGTTCC TTTAGAAGCA GACCTCGAAA TAAGGATGTG GGTGCCAGTC  
ATTTATTGAA AAGATGATCC CAAGAAAGCC TAGTAGGAGA GTGAGGAAGT GAGATGGGGA AAGGAAGAAA CTCACAAAGA  
AGTGTGTTAA TAAGCAGGTT ACCGCTGTGG GCAGCCATGG GGCTCAGCTG CACTAACAAA CTCTGTCTAG TACAGAAAAC  
CTCAGGGTCT CCCCAGGGA GTAAACCTTA GTTTTACAT GAGAAAATGT TACAGCAGCC TTCTCGGCTT GCTTACCCCT  
CTGGGAGGGC ATGGTTAATT CCTCTGCACT TTCAAGTGA TTTCTGTGGT CAGAAAAAGC CCTCTACAAT GAATTCAGTA  
TGCTTGATT TAAATCTGAC ATGATCTGAA TGCTGTGTG GGACAGGGTG GCGTTATTA GTTTCTGTG ATTACTGTAA  
CAGATTACTA CAAACCTGAT GGCTGCAAA ACACATAATT TATTTGTCA TAGTTTGTG GGTGCAAG AGTACAGTTAG  
CTCAACTAGT TTCTGTCTC TAGGTTTAC ATTGCCAATA TCAAGGTGTC ATCCAGTTGG GCTTCTGAGT GGAGGTTAG  
GGATGAATCC ACTTTCAAGC TCATTGAGT TGTGGCAGA ATCCAGTTTC TTGTGGTGGC AGGACCAAGG TCCTGTGTG  
CTTGCTGGCT GTTGGCCAGG AGTCATTCTT AGCTTCTAGA GACTACCTGT ACTCTCTGAC TCGTGTCTCC ACTTCACCTT  
TCAAACGAG AGCGGCTAGT CGAGTCCCTC TCTTCAAAAT TCTCCAATG TGCCTTCACC TCATTCTCTC TCTGTGTACC  
ATGTGCTCT TAAGGGCTCA TGGGATTAT TCAATCCAGG ATAATCTCCA TATTTTAAGG  
CTAGCTGACT AGTGATCTTA ATTCCATCTA CAAAGTCCCT TCCAATTAGTA CTGTATTAGT CCATTTTCTT GCTACTGATA  
AAGACATACC CAAGACTGGG CAATTCACAA AAGAAAGAGG TTTAATTAGA TTTACAGTTC CACATGGCTG GGAAGCCCTC  
ACAATCATGG CAGAAGTCAA GGAAGAGCAA GTCATGTCTT ACATAGATGG CAGCAGGCAA AGAGAGAGAG CTGTGCGAGG  
GAACCTCTCT TTTTAAACC ATCAGATCTC ATAATCTTA TCACTATCA CAAGAACAGC ATGGGAAGAG CTGCCCCCA  
TGATTCAATT ACTCCACCA GGTCCCTCCC ACAACATGCA GGAATCTAAG ATGAGATTGG TGTGGGGACA CAGCCAAACC  
ATATCAAGTA CTAGATTCA TGTGTGATTA AACAACCAGG GAGCAGAAAT CTTCAGGAGT GGGGGGCATC TTTAGAATTC  
TGCCACCAA GGCTGGGCGC GGTGGCTCAC ACCTGTAATC CCAGCACTTT GGGAGGCCAA GGTGGGTGGA TCATGAGGTC  
AAGAGATCGA GACCACCCTG GCCATGGTGA AACCCTATTT TCACTAAAA TACAAAAAT AGCCAGGTAT GGTGGTGGG  
ACCTGTAGT CCAGTACTC AGGAGGCTGA GGTAGGAGAA TCACTGAAAC CCAGGAAGCG GAGGTGTCAG TGAGCCAAGA  
TTGCGCGCT GCACTCCAGC CTGGGAGACA GAGCAAGACT GTCTCAAAAA AAAAGAATTC TGCCCATCAT AGTAGGCTGT  
CCTACAGAGA CATAACCCAG GAATTAGGTG AATGGCTAAC CTAATTAGC ACTGTGATGT GTTTCTGAC TTGGTCTTA  
TAGCTCTCT GCTTAGATGT GGAACCTAAT CATGAATGCA AGGGTTTGT TAGAGTTTA AGTGGGAGT AAATATCCAA  
AGTACAGGAG ATATTATGGG TGCCTCATCC ATGTGCCCTT TTTCTTGGAT AACCCAACTT TATAGTTT  
TATATCTCAC TTGTTCTAT ACTCTGTGAA CTGATGTCCC ATAAATAGAC ATTTCTTTT GCCAGTCTT TGAACAATA  
ATTACGATTA TTAATCTAGC AGTTATCATT AATTGGCCAC TTCACATTAG ACACAGCACT TAGGACTTAA GAATACCATG  
TCATTTGATC ATCATAATAT GGTGAGGAT TAAGTATTGC TATCCAAAT TTACAAAGAA GGCAGTGAAG GTTAGAGTTT  
AAATAACTTG CTTAAGATGT CATAGCTGT AAGTGACAAA ACTGAGCTC AAATACAGGT CCATCTGACT CCAAAGTCTA  
TGTCTTGGC TACCACACTG CCTCTCTAC AAGTGACCTG TGTGTTTACT ACTATATTCA CACTCTACTA ATCTTACCAT  
CTCCATGAG TCTGTCTAGA GGAGGGCACA CACAGCACAG AAAACACATG AATGCAAAAT AAGGAAGGGC CTACTTACTA  
CACAGAGCCA TTCTAATACC TGATGTTGC TCTAATCCAG TTTTACTATT AATTAGTTGC TGTGCCCCAA GTTTTACTG  
AGAAATGGG ATAATTTGG AAGTCATAAT GATGCTTCT TCTCATAGG TATTTTATT GTTGTGTAT CTCCAGGCC  
CAACACAGCC TGGCTTTAG TAAATGATCA AAAATCACTG TTGAATGAAT AAATGGAGTC ACCTGAAACA TGTAAACAT  
TTGTTTATGT GTCCTAATCG TGGATTTCAG GATAGTAAGC ATCTAAAAG GAAAGCATGC AACTGTTCT TGCTACATTA  
ATTTCTACA ATATAAAAA AGAAAAGCAT CTGAAAAAG CTGCCAGCCG CTGTGTCTCC TAATATCAA CTGAGCACAG  
ATATGGAGAA GCTAAGGGAG AGGGATGATG GGCCATGCCT CTAACCTCAT CATGGCAAAA GTCCTGGGG TCAGACCCGA  
GGAGAGCAGG AAGTGTCTT TGAGGGATAC ATTTCCACAT TGAAATAAT GAGACTTAAA TAAATATTAT ATACCAAGT  
CAACTGTTT TATGTGTAAG GGTAGTAGGT TTTACAGTA AGGAAGCACT TCTTTTTTT TTTGTTTGG ACAGAGTCTC  
GCTCTGTCTC CCAGCCTGGA GTACAGTGGT GCTATCTCG CTCACTGCAA TCTCTGCTC CTGGATTCAA GTGATTCTCC  
TGCTCAGCC TCCCAGTAG CTGGGACAAC AGGTGTGTG CATTACACCT GGCTAATTT TGTATTTT GAGAGATGC  
GGTTTACCA TCTTGGCCAG GCTGATCTCG AACTCTGAC CTACAGTTGT CTGCCCCCT CTGCTCCCA ATGCTGTGG  
ATTACAGGCA TGAGCCACTG CACTACCAA GCATTCTAC TGATAGCATT TACAAACCT TCTTAGAATA TTTAAAAAT  
CTAAGAGAAG AGTAAATGA GCCTTCCCA CTAATACTAG GAGTTATAA CCTTCATACC AAAACTGGAC AATGCTTGA  
CAAAAGAAG AAGCCAATGA GGCCACCTAG AAGGAAGACT GGGCTTTGG CCCAGTGAAG CCTGGAACCT CATCTGGG  
CAGCACCCC GGCATGGCT GTATGAGTG ATGAGGTGA TTTGTCACA GACAATAGC ATCTAGCTGT GATTAAGTGA  
TCAAGGTAGT CAGCTGCATC TCTTACCT GTTGGCAAT GTTACACAGG TTGAAAGCT AAGGTTTATG TAAAGCAAGC  
ATCAAAGATG ATGAAATGAT CAACCTGACA ATGAGTACTA TGCTGCATTG TCCAGAAAGG AACTGTGGAA GATTTTGGG  
TGAATTTCAA AACAGAATT CCTCACTCTC TGGATGTTG CTACTTGGC CTGTGATGT CAGAGGTGGT GCCTTGTGT  
TGTGAACAA TGTGATTTT GGAGAGAAAA CAGAGTTGAA AAACCCCAA GTCATTCCCT GGGAGATTAT ACCGAATAC  
AGAGGATAAT TTCAGCAAGC CAGCAAGGCC TCATCTCTG TTCTAATAGA TAGGAAGAAA GGAAGAGAGG AACCAACTT  
TTTTAAGAAG CTCAGTTTA TCGCTTATC TCATAGAAAG ATGCTCCAG TCTGTCTGG TAAAGGTAAT TGGCATGGGA  
AAGTCTTAT CTGTGATTCT AACAAGTGA ATGTTTCCCT TCATTAAGAG AGCCTGTCT GGCTGGGG AATGAAACAC  
TTCTCCGAT ATGATGGG TGTAACCCCT GCTACTAAT ACTCAGAAGA AATAAGGCGG TTGTGGAGCA GTCAGGAATG  
AGTCACTTGC CTCCTGGAA TATTACAAA ACTGAATCAA AAGTCAATTC TTCTGGGTTT TCTTAGTCTA ATAGACTAAG  
GGTCTCTACT TTGTTAAAT TCTGGGAAAC AGCATAGAAT GGGAGAAAA ACTGGTCACT GTAGTCATGC AAATCTGCAA  
AACAAACAAA AAGTCTGGG TATTGCTGCT AACTAGCTAT GTGACCTTAA GCAAGGTATT AACTCTCTCT GAATTTCAAG  
TTCTTCTAT GTTAAATAGC ATATCTGTAA AATGGGAATT ATTTTCATAT CATAATGCTG TAGCTTTAAA AAATAAAATA  
AAATGAGTGA GATAATCAGA ATAAAGAGC CTGGGATATA TGTATAAT ATAGCAGCAT GTAAAGATCC TGTGAGAAAT  
GCTAATTTTA CAGTTAACCA TTTGGAGATG ATCCGCCAAA GCTGCTAGTG TAGAGGCAAC TGAGAATTTG CCTGTCTTC  
AGAATATGAA TAAATACTG TCAATGATGT CTCAAGCTA GAAAAACCTA TCCATCTGGA TGGGTGGGAA ATTTCTAGGC  
TAGTATTGAG AAGCCCATTT CTGGGGAAT AGGTCTTGA CTGAGTGAAG GAAAAAGAAC AGTAAACCC ATGGTAAAGC  
AGCAAGCTC TCGAGAGGA TGAATGGA TGTAGAAGAT GAAGTAGGGA AGACGCTTTA CCTTCTGTG  
AAATGGATTC AAAGATTCAA AGACCTTCGG GAATCTCAA TGTATAAT GGCACCATAG CTGATGTTT CATTGAAAC  
TACTTCCAG AGATGCCAG TGAAGAAAGA ATGCCACAGT CAAATAAGTT TGAAGCACT CCATTATGTG GCCACCTCT  
TGAAGACTCT AATGCACATT AGCATGTTAA ACAGTCTGA GAAGTCTGC AGAGCAGAAA TTGCTTACA TCTGCTAAGC  
CGGCAGTTT CCAATATACT TGATTATGGA TAGTTTTTC CTTACAACAC CATCTCTGA TATGCTTCCA ATGACATGAA

ATAAATATAT ATGCATGAGG TTCTTCATTA GGGCATACTT TTTAATAGAA AATATTGAGA ATAATCTAAA TATAAATGCA  
CAGCATTTAC CTTTTCTGCA TAAACTATAT ACAGGCATAC CTGGGAGATA CTATGGGTTT GGTTCCACCA ATATCTCCAA  
AACCACATTC GGTTTTATGA CCACTGCCAT AAAACAGGCC ACATGAATTT TTTGGTTTCC CAATGTATAT CAAAGTTACA  
TTTTTACTAT ACCATAGTCT ATTATATATA CAATAGCATT ATATCTAAAA AACACGCTAA ACACCTTAAT TTAAGGCTGT  
GGCTGGTTTG ATTTTCTACC CAGACCACTA AAACTTTCTT CATATCAGCA ATAAGGCTGT TTCACTTTCT TACTATTTTT  
TGTGATAGCA CTTTTCTTTT CCTCAAGAA TTTTCTTTT CTATTCACAA TTTGTTTGAT ACAAGAGGAC TAGATTTTAG  
CTTATCTCAG TTTAAGGTGT TTACATTGTT AGCTAAAAAT GCTAATGATC ATCTGAGACT TCAGCAAGTC ATAATCTTTT  
GCTGGTGGA GGTCTTGCCT CAGTGTGAT GTCTGCTGAC TGGGTGGCTT TGGCAATTTT TAAAGTAAG ACAACAATCA  
AGTTTGACAT ATCAATTGAC CCTTCTGTG ATAAATGATT TTTTTTTTCT CTGTAGCTG CAATGCTCTT TGATAGCTAT  
TTACCCACAG TAGAATTTTC AAAATTGGAG TCAATCCTTT CAAACTCTGG TGCTGTTTA TCAACTAAGT TTATGGAGTA  
TTAGAAATCC CTGTGTGCA TTCAACAAT GTTCACACCA TCTTCCCCAG GAGTATATTC TACCTCAAGA AACCACCTTC  
TTTGCTCATC TATAAGAAGC AGCTCCTCAT CCACTAAAGT TTTATCTGA GATTGCAACA ATTCAGTTAC ATCTTCAGG  
TCTACTTCTA ATTCTAGTTC TCTGTCTGT TCTATCTCAT TTTCTCGCTT TTTCTCGCT GAAGCTTGA ACCCTTAAAA  
GTCATCATG AGGGTTGGAA TCAACTTCTT ACAAACTCCT GTTGATGTTG ATATTTTGAC CTGCTCCCAT GATTCATGGG  
TATTTCTAAT GGCATCTAGA ATGGTGAACG TTTTCAGAAAG GTTTTCAGTT GGCTTTGCCG GGATCCATCA GACGAATCCC  
TATCTAGATG TATAAAGAT TTATAAATG TATTTCTTTT TTTGTGGGG CATAGCGTCT CACCCTGTCA CCCAACCTGG  
AATGCAGTGG CACAGTCATA ACTCACTGAA GACTCAAACT CTGGGCTCA AGTGATTCTT CCACCTTGGC TCCCAAAAC  
ACTGGATTAC AAGCTTGAGC CACTGTGTCT AGCCCAAAAT GTATATCATA ACTAATGAGG CTGAAAGTC AAAGTGACTC  
CTTGATCCAT GGGCTACAGA ATGGACGCTG GGTTACCAGA CATGAAAACA ATACTCATCT CCTCATACAT CTCTTCAGA  
GCTCCTGGGT GAGCAGGCC ATTGTCAAT GAGCAGTAGT ATCTTGAAG AAATTTTTT TCTGAGCAGT AGATCTCCAC  
AGTGGACTTA AAATAGTCAG TAAACTATGC TGTAAACAGA AGTGGTCTCA TCCAAGCTCT GTTTTCCAT TGATAGGGCA  
AAAGCAGAGT AGATTTGGCA TAATTTCTA GGGCCTTAGG ATTTTGGAA TGGCAAATG AGCATTGGCT TCAACTTTTT  
TTTTTTTTT TTTTTTGAG ACAGAGTCTT GGCTGTGAC CCAGGCTGGA GTGAGTGGT GCAATCTCGG CCCACTGCAA  
GCTCTGCCT CTAGTTTAC ACCATTCTCT TGCCTCTGCC TCCTGAGTAG CTGGGACTAC AGGCACCCG CACCATTGCC  
GGCTAATTTT TTGATTTTA GTACAGACGG GGTTCGCCG GTTGTGCCG GATGGTCTCG ATCTCTGAC TCGTGATCC  
ACCCGCTCG GCCTCCCAA GTGCTGGGAT TACAGGCGTG AGCCACAGCG CCCAGCCTGT CTTCACTTA AAGTCGCCAG  
CTGTGTTAGC CTCTAATAAG AGAGTCTGCC TGCTCTTCA AGCTTTGAAG CCAGGCATCA TTCTCTTCTC TAGCTATGAA  
AATCTTAGAT AGCATCTTCT CCAATAGGA AGCCATTTT TATGCCCTAA AAATCTGTG TTTGGTGTAG CCACCTTCAT  
CATTTAGTCT ACCTAGATCC GCTGGATAAC TTACCACAGT TTACATCA TTACTTCTG TTACCTTGC ACTTTTATGT  
TATGGGGATG GCTCCTTTCC TCTAACCTCA TAACTAACCC TCCACTAGCC TCACATTCTT CTTTACAGC TTCTCGCT  
CTCTCAGAGT TCACAGAATT GAAGATGTT GGGCCTTGA TTACACTTGT GTTTAAGGGA ATGCTGTGGC TGGTTTGATT  
TTCTATCCAG AACACTAAAA CTTTCTTCAT ATCAGCAATA AGACTGTTT ACTTCTTAC TATTTTTGT GATAGCATT  
TTCTTTCTT TCAAGAATTT TTCTTTCTA TTCACAATTT GACCGTTGA TATGAGAGG CTAGATTTTA GCCAATCTCA  
GTTTACACCA TGCCTTTTTT ACTAAGCTTC ATCATTTTAT CTTTTTTAT AAAGTAAGAT GTGTGACCTT TCTTTTCA  
TGAACACTTA CATGATGATG CTTGGCTTCA AAGCTTGAAA GGACAGGCG ACTCTCTTAT TAGGGGCTAA CACAGCTGGC  
GACTTTTAA TGAAGCCAA TGCTCAATTT GCCATTAGAA GCCATTGTAG GGTAAATTA TTTGCTAAT TTTAATATTA  
TGGTGTCTCA GGAATAAGG AGGCTGAGT AGAGGGAGG AGATGGGGA ACAGCCAGTC ATCAGAGCAC ACACAACATT  
TATCAATTA GTTTATCACC TTGAGGGCAC AGGTCATGAT ACTTCAAAAC AATTACAATA ATAAATATAA AATCTATGA  
TCGAGATCA CCATAACAGA TATAATGATA ATGAAAAAT TGAAGTATTG TGAGAATTAC CAAACGCTGA CACACAGACA  
CAAAGTGAGC ACATGTCATT GGAAAAAGTG TGCTGATAGA CTACTTCTAT GCAGGGTTGC CACAAATACT CAATCTGTAA  
AAAAATTAAT TATCTACATA GTACCATAA AACAAAGTAT ACCTGTTTAT ATAATCAAGA CCAACAGAAC CCTAGAGAAA  
ATAGTCACT CCCTAGCTCG GAGACATTCT AACCAACATA CACTTACCTT TCTTTTGTCT GTGTACAGAA TTCAAATCCC  
TGCTCAGCA AAATTGCAA GTATCAAATG TCATGTCCAT CTAATACTCA AAATGCAAA TGTAAAGTCT TGTAAGCCCA  
GAGACCACTG TATATACAGG TGTGTCTATA AGCATTAGTT CTCTCCAAA GAAAAATAGT CACTTGGTAG AAACAAACAA  
AAAGAAAAAA AAGAAAGAA AAAACATTT TACAAGAAG ATTCAGTCTC TTACCTACAT AAGCAAAAAAT ATGAGATGTT  
CTCTTATCAT TTTTCCATCT ATCTTATAAT CTTTGGTGT GACTTACAGA CTCATTTTCC TTTTGTACG TGACCATGTA  
AAAGTTCAAG TCAAGAAAA CTTGTTTGA CATTGTTTT GCTGAGTGAT GGGTCCCTAA AAGAAATTTG GCTTGTCTT  
TGAAGAGTTC AGCATGATAT TGTGTGAATT TTTTCATGCT AATGATTTT AGAACAGTTG TGATGTGTT AGGTGTTTA  
AGAAATGAA GCATTAGTG GTTTAAGTTG GTTGTATAA AATGAAGAA TATGAAGGAA AGCCTTCTG TCTTGAACA  
CACTGATTCA CAAATAAGCA GCTTCTCA GTTATGTGA ATTACAAAA TTCCAAGGCA AATATAATAA ACTCTGTGCT  
GGTGTATGT CTAGAACTT AACAGCCCCA AAGAAAGTCC TGACAAGGCA AAAATATAT ATATATATAC AAATTGTGGA  
AGCAGGGTGT TGAAGAGAA ATAAAGACTA TATAAGGACA AACTGTTTAA AAGGAGGGGT ATCTTGAAA GCTTGACACT  
TGACTCTTT GACGAGGCTG AGGGAAGAA CTCAGTTTCA TAGATTGCTG GTACGGATGT AAAATAGTGA CATCCCTATA  
GAGAGGAATT TGGCAATATC TAGCAAAAGT GCTTATGAT TATTCTTTG ACCTAGTAAT CCCGTGTCTA GGATGATGG  
TGAAGATACA CCTCAACAAT AAAATATAT ATACATTAGG TTATTAGTTA TGGTTAATT TTTAATAGCA AAATATTTAA  
AACACCTAC ATGAACAAAT AGGAGACTTA CTGAATAAAC TATGGTATAT CTGTACAATA AAGTGCAATT CACTTATGTT  
GTTAATTTGT TCAAAAAATC CAGAGCCAAA GAGTATTTGT TATGCTCTCT TTAGTATAAG AAAGGGGAAA TAAGATATGT  
GTGCATCTGT TATTTTTTGT GAAAAAAGT ACAGAAAGGA TAAGTAAGAA ACTAGTAAAA CTAGTTTAT CTTAGTTGTA  
GTAGAAATAG AATGAAGTG AATTAGGCTT CTTTGTAGT ATGTTTATAT ATAGTTTGA CTTTGTAAAT ATGTTTATGT  
TTACATAGTC AAAAATATAA ATTAATCAAC AGAAATAACA AAAAAAGAAG AAATCACAAG CTTTAAAAAT TAATACAAAC  
AGAAATAAT GAATCTAACA GTATATCAA GTGATAACGT AAATCAGAA GAAAAAACA TAATCAACA TACCAGTGGA  
ACACAATAT CTACTGTAT ACATTCACTG GTTATAGTCT AAGGACAAGA AAAATTGCAA AAATATCTTG AACTTTAGCT  
TGATAGGATTT TTATTGGTAG CAATACTAAT GTACTAATTC TGAATTAAT GTTCGTGTAT TATAGAATT AGTAAGTGA  
TAAATATGTT GATGTTATTG GGAACATAA TTATCATTCT GGGAGTAGAG AAATATAAAT ATGGACTTGG CAAATGAAAC  
AAAGACCTGC AGAGAGATAA CCATATAAAC TCATTATTT AAAAATTATA AGTGTCTAG CTCTGTACT GAAAAAGCCT  
AGATTCTAT TTATCTTGT AGACAGGAG GCACCCCTTT CTCAGAACAT GGTTCCTCAA TGCCATCTC CATTAAAAAG  
AACAAAGTCT TCTTGGAGAA AAGACTGATT CTAGGTCTGG ATCAGTAAA GTACAACGTT AGTCTGGAAT TCTTCTGTA  
ATCAGAAGTA AGAAAGTGCT CAAAAACATG GGAACATGTC ACAAACACAC GTGAGGCAAC TTGAATCCTC ACTGGCCATA  
TTTAGGACAA TCAGCATCA AAAAAAATAA AATGTTGAG AATAATGGAT TCTAACACTT AAAACAAAAA ATAATCCATA  
CCCCACAGAA GGGGAAGAGA GGGGGAGCTC TTATTACAG ATGAATATCA AATAGCAAG AGAGAAGAAA TGACAGAAAT  
AGAGAAACAT CATTITGCAA AACACCACTG TAATAATCAA TTAGGCAAG TATTATTAAT GATGTATTA TCTTGGTA  
AAACCAAGTG GGGAACAGGA TATTCATACA GTCTGAAGGT GTCACCCTAA ACATACTTA TTACAAGTG AAAATGGTGC  
CTTTACAATG AAGAAATCTA GCAGAAACCA TCTTAATCTA GTGATCAAAC TTAGTATCAC CAATAATGGA TCATACTGAG  
TCATGTGTCT CCTAATATGA TGCACCAGGA AGGATGCAAC GTCATGAACG TTGTATTCTT TTGTATTCAA CAGACCACCC  
AGGGTAAAGG CAGCTTCTC ACTTAAT TGAATTTT GTTTTAAAT CATTTTGGAT TTTAAGATT CTTACTTCT  
TGTCAGCTCA GAAATTTATT TAAGATGATT TTTATCTTTT ATTCATACT TTAGCTTGA GAACCATCA GAGTTCTAA



CTCATTGTAT TGCCAAAAAT AGAAAAACAGC ATGGTTTCTT TGGAAAAATGT CTAACCTTAA AGTTACTTGT GTGTGTCACT  
CAGATTCACA TAGCTTTTTT GCCTAGTAAT GTAGTATCAT GTGGCAAGGC TATAAAAAATG TTACAATCT TTTATTTAAT  
ATGACTCTTG AGAGTTTATT CTAAGGAAAT AATTGAATAG TAACAAAACA CTATTAACAC AAAGCAATGC AATTGTGATT  
GGGCAACCAA AACTGGAAG CAACCTAAAT GTCCATTACA GGAATCATT ATGAAGCAAA CACTAAAATA TTTATTGTGA  
AGATTATGAG AACATAGAAG ACAGTTATGA GAGTAAATTT GAAAACTGA ACACAAAACT TACATATACT CCAATTGTAA  
CTTATAAAAA ATACGTGCAT ATAAGGATAA AACAGTACAA AAAAAAAAT AGTTGCGTTA GATTGGTAGA ATTATGGCTC  
CTTTGCTGT CTTAATTTTT TCCTTTTACA TTTTGATACA TTTTAAAT TTTAATTTA AAATTCAAAA GAATTTGCCA  
CTCATCTTTG CCACCTCAAG GAAAAAAGAA ATGTGTTCGA TTATCTGTT CTTAGTATAG TTTTGGCAAT TTCTCCACGT  
GTAAAAAGAG AATACTATTA ATAATTTTCA TATCTATAAG ACAATATAAA ATTAAGAAT CTAGCCCACT AACTGGTACA  
TGGAACGTAA TTAATAAATC ATTATGGACT TTTTTCTCA CACCCAAGTA GGGAGGAATC AGTGGTCCCC TAGAGGCCCA  
GTGTAGAGGT GGCAGCACA ATCCCTAGGG GAGAAGATCT TGGTGATGAT AATTCCTGAG CAGACAGTTA GCTGAGAAT  
CAAGAGCAGA AAAGTAAGAA AGAAACAAC TCTTGCTAAC ACCTTCCAC CCACGTTTCC CTGTTCTGTT GTACTCTGCT  
TACCTTTTCA TGGATGGAGG CAGAGGAAAG AGAACCAAGT TTGCTCTTAG TCATTCACCTA TGTGTGTTAA TCTGCCTTCC  
ATCTTTCTTA TCAGTTCAAA TTAGAATGTA GACCTGAAT TAAATCCCCG TTCTGTCACT TATAATGTGA CCCTAGACAA  
AACACATTCT CTGAACCTCA GAGAACATTC TTTATTGTA GAATGGGAAG ATTAATCTAT ATTCCACTTG GATGGCAAGT  
CTTTTATAA CTTTATAACC TAAACATGTG TGAGTTTCTA GTATCTTAT GTTGGTAAAG TTTTGGCAAT ATATGTAAAC  
AGAACTGTTT TGCTAACTC CACTAGCATG GTTCAGGTTT AGAGAGTGTG GAATTAAGA GCTTTATCCT CAAATATGAC  
TTAAATCCGA TTTTCTCAT CCACCTTCTT CCACAAACA ATCTCAGGA AATGACAAA TTTACATGGT TAAACATCAG  
TTTTGTTAG TCTTTGACAT CCACATGGT AAATCATACA TTTGAAAACT GCTTATATT GTGTGTCTA TGTCTAAAT  
GAAAAAGACT ATTGAGGAAT AGAAGACTAC AATTTTCTA GCAAACTAGT CACGTTTTG AGAATTTTCC CAGGACCTAG  
TCTCCAGGAA TTTATTGGCT ACTAACAATA CTAAGATATG GATGAATGAG GAAATCAAAA TGGAGATCTT GCAAGTTTGT  
TGAGAATGGG TGAATGGTCC AAATGAAGAG ATAAGTTGTG AAATATTAGT ACAAGTAAAA ATTATTACA ATGAAAGACA  
TTTTGTCAAT AGCTATGAGA ATTTTACCAT TGACCCAGAA ATTCCATTTC TTTCTCAGA AATACCCACG TAGGTATACA  
TATAAAGAT TATTCATTAC AGTATCGTTT TTAATAGGAA AAAGTTTAA AAATCAGAAG CTATCTAAC TATGGTATAT  
CTAGGTCATA GAAATCAAAAT GACTAAAAAT GTTAATATAA GCATATGTT TAAATTAAC TTGGCTTGGG TCTTCAGCAA  
AATTGGCTTC TTAACATTGC ACTCCAGAGT TAGACTTACC CACTCAGTCA CTTATCATGC AGGAGCAGAC TCCTAATACC  
ACATATCATA GAGCAGAGTA GGACACAGGT TCTCTGCAAG CAGGCAAAAT CCAAAGAGAA GGGAGGAAAG GGCTGAGACA  
CTGCATGCTC AATTCTTCT GAATCTGCA ATGTACGGAG GTGGCAGTG TCCACAAAGA TTGCTCCCTT GGACCCACCA  
TCATAATAAC ACAACGGCTT TGTTTTGT TGTTTTGT TGTGTGACAC GGAGTTTTG TCTTGTGTC CAGGCTGGAG  
TGCAATGGTG TGATCTGAC TCACCACAAC CTCACTTCC TGGGTTCAAG TGATTCTCCT GCCTCAGCCT CTTGAGTGGA  
TGGGATTACA GGCATGCACC ACCATGCCCA GCTAATTTT TATTTTATAGT AGAGACGAGG TTTCTCCACG TTGGCCAGGC  
TGGTCTCAA CTCTAACCT CAGGTGATCC ACCCGTCTT GCCTCCCAA GTGCTGCGAT TACAGGTGTG AGCCACCGCG  
CCGACCCAC AATGGCCTT TGTTTACATC TCTAGTCAG CACTCATTTT ATGTTCTTTC AAGAAGAATA CATATTTCAT  
CTTTTATTT TATACAGCAA TTAGCACAGT GCCTGGCATA AGGAAAAATGA TCATTAAGA CTGGGTGAAA AACCTAATAA  
AGCTACTGAG GATAGGAACT GCAGACCAGC ATGGAAGAA AACTATGAGC CAGATATTGA CATCATCTG AAAGGCAGAA  
GATTATGAT AGGCAAGAAG TATGCTTTT GAATATAGAA AATCTGGATT ATGATAAGAA AAGAATCATA TTTGTCTTAT  
CTTACCTACT CACTCTCAG TTCCACATG TTCTGAGCT GTTGTCTT ACCTTCTT CTGTTTATC CTGTTTCTT  
GTTCTTTAGA TTGGATCATT CCTATTGAGC TGACATCAAG TTAAGTGACC TTTTATTTT TCCAACTGC TGTAAATGC  
ATCCAGTGA TTTTAACTT TATATAGTAT ATCTTTTAT CTAGAAAT CCACATGAGT TTTTAAAGT TCCATTCTC  
TGCTGAGATC TCCTATTGT TCATTCATTA TGACCATATT TTTCTCTACA TTATTGAGCA TAATTATAAC AGCTCTCTA  
AAATCTTGT CTGCATATC TAACACCTGA ATTATTCTGG GTTCAGTCTC TGTACATTG CCTATTACA AAAACAGTAT  
AAGTCACATT GCCTGTTT TTAATATGCA AAATGATTTT TGATTGCAGA CTAGACATT TGAATTAAC ATTATAGAGA  
TTCTGGATT TCGAGAGAGT ATTGACTGT TTTTCCATC AGGCAGGTAA CTTGACTGGA CTCAAACCT AAACCTAGG  
TCCTCTGTA TGGGCAACTG CAGTAATCTT TGTTTAGTT TTTAAGACT ATTGGCCAGG CACGGGGGCT CATGCCGTGA  
ATCCAGCAG TGTGGAGGC CAAGGTGGGA GGATCAGCTA TGGTCAGGAG TCGAGACCA GCCTGGCCCA CATGGTGAAA  
CCCTGCCTCT ACTAAAAATA CAAAAATTAG CCGGGTGTG TGGTGGGCG CTGTAGTCCC AGCTACTCAG AAGGCTAAGG  
CAGAAGAATC ACTGAACCT GGAAGGCAGA GGTGCGAGT AGCCGAGATT GTGCCACTAT ACTCCAGCCT GGGTGACAAA  
AGCGAGACT CCTCTCAAA AAAAAATTAT TGGCAGTCT TGGCATCTGC TATGAATACA TGAAGTTTAT GGGTCAGCTA  
TAGATCTGG CAGCTTATAC ACAGAATTG GGTCTCCCT TCTCTGGATT TCTCTTTT TGGATTCTT TCTCATTTT  
CCAGCAGCTG TGGTGGCCT AAACCTGGTC CTGTGTTT TTAGCGCAGT AAGATTGGG AACTTTTAGG TTTTACCTGC  
CTCTCAGACA AAATAAAAAA TAATTTTCT CTTGATGCTA CTCTTTCTT CCAGATGTAG ACACCTCTT AATTTCCAGT  
TGCTTTTAT TGCTCTCCAG AGTCTAAAGA TTATCATTTT TTTCTGTGG AGAGTTGGT TGATAAAAAA TACTCCCCA  
AACTGGAAG CTGGAAGCTT GTAATTATGA ATAGACTTT AGTAGTATTC TCTTTTGGAA AAGGATTTA ACTACTCCT  
ATGTACTTG TTTTCTCTG TTTTCTCAT CCGTAATCT TTTTATTTA TACTCTCTA TGTACAGATA TTTCTACTT  
GAAGATTGAG TGACTGCTAT CAAATGACCC CATATTACT AAATACAATA TCCCAACTG CATTATAAA AAGAAAAAT  
ACTGTTTAT AGTAAACAAT GTTGTAGAAT AGTAAATAT TGCTGGGCT TGGAGCCAGA TAATCAAGGT TAGAATCCCA  
GATTCTAAT TACTAGCTGG TGTATTAGT CTTTCTCAT CTGCTAATA AGACATACCC CAGACTGGGA GACTGGGTAA  
TTTATGAAGA AAAGAGGTTT AATTGACTCA CAGTTCAGCA TGGTGGGGA GGCCTTAGGA AACTTACAGT CATGGTGGCA  
GCAAGGAGAA GTTCCAAGCA AAGAGGGAAA AGCCCTTAT AAAACCATCT GATCTTATGA GAACCTACT ACTATCACGA  
GAACAGCATG AGGGTAACTG CCTCAGCTT TAATTACCT CCACAGTTC CCCCCATGA CACATGGGGA TTATGAAAGC  
TATAATTCAA GATGAGATT GGGTGGAGAA ATAGCCAAAC CATATAATTC CACCCCTGGC CCCTCTCAA TCTCATGTCC  
TCACATTCA AAATCAATC ATGCCCTCCC AACTGTCCC CAAGTCTTA ACTCATTTA ACTTAACTG AAAAACTCAA  
GTTCAAAGT TCATCTGAGA CAAGGCAAGT CCCTCTGCC TATGAGCTA TAAATCAAA AGCATGTTAG TTACTCTTA  
GATACAGTG GGTACAGGC GTTGGGTAAA TACTGATT CCAATGGGA GAAATGGCA AAACAAAAGA GTTACAGACC  
CCATGCAAGT CCAAAACCCA ATAGGGCAGT CATTAACATT AAAGTTCAA AATGATCTC TTTGACTTCA TGTCTCAT  
CCAGTCAAC TGTGCAAG AGGTGGGCTT CCAATGGCTT TGGGAGCTC TGCCCTGTG GCTTGCAGG GTATAGCCTG  
CTTCTGTTT GCTTTTTCAC AGGCTGACAT TGAGTGTCT TGGCTTTCC ATGAGTATGG TGAAGCTGT TGGTGGATT  
ACCATCTGG GGTCTGGGC AGGTGCAAGT GTCATGCTT GTAATCCCAG CACTTTGGGA GGCTGAGGT GGGGATCACA  
AGGTGAGAG ATCGAGACCA TCCTGGCTAA CACGGTAAA CCAAGTCTT GCTTAAAAA TACAAAAAT TAGCCAGGCG  
TGGTGGTGG TGCTGTAGT CCCAGTACT TGGGAGGCT AGGCAGGAGA ATGGCGTGA CCAAGGAGGT GGAGCTTGA  
CGAGCTGAG ATGTGGCAC TGCACTCCAG CTTGGGCGAC AGCAAGAC TCCATCAAAA AAAAAACAA AAAAACTATT  
CTGGGCTCTG GAGAATGGTA GCCCTTACAG CACCACCAGG CAGTGCCCA GTGGGACTC TGTGTGGGG CTCTGACCCC  
ACATTTCCCT TCTGACCGC CTAAGTAGAG GTTCTCATG AGGTTTCTAC CCCTGACGA AACTTCTGCC TGGACATCCA  
GGCATTTCCA TACATCTCTG GAAATCTAAG CCGGGAGGT TCCCAACTT CAATCTTGA CTCTGTGCA CCCACAGGT  
CAATACCA CAATAGCCAC CAATGCTTGG TCAAGCTTGA AACCTCTGA AGCAATGGCC TGAGCTGAC GTTGACACCT  
TTAGCCTAG ACATCTAGGA CACAGGGCAC CATGACCCGA AGCTTCATA AGTGGGAGG CCTTGGGACT AGGTGAGGA



ACCATTTTTC CATCCTAGGC CTCCAGGCCT GTGATGGGAA GGGCAGCCAT GAAGGTGCCT GACATGCCCT GGAGACGTTT  
TCCCCATTGT CTGGTAACCT AACATTCAGC TCCGTGTGCA GCACCAACTT ACTTATGCAA ATTTCTGTCA CTGGTTTGAA  
TTTCTCCCCA GAAAAACAGGA TTTTCTTTT CTATTGCAT ATCATGCTGC AAATTTTCAA ACTTTTATGC TATGCTTCCT  
GTTGAAGACT TTGCGGCTTA GAAATTTCTT CCCCAGATA CCAAAATTA TCTCTCTCAA GTTCAAAGTT CCACAGATAT  
CTAGGGGACA AAATGTTGCC AGTCTCTTTG CATAGCAAGA GTGACCTTTA CTCCAGTTCC CAACAAGTTT CTCATCTCCA  
TATGAGACCA TCTCAGCTTG GACTTAGTTG TCCATGTTAC TATCAACATT TTGGTCAAAG CCATTCAACA AGTCTCTATG  
AAGTTTCAAA CTTCCCATG TTTTCTGTG TTCTAATAGC CCTCCAAATT TTTCCAACCT CTGTCTGTTA CCCAGTTCTA  
AAGTCACCTT TACATTTTGG GGTATCTTTA CAGCAGTGGC ACTCCCATG GTACTAATT ACTGTATTAG TCTGTTCTCA  
TGCTGCTAAT AAAGACTTAC TCGAGACTGG GTAATTTATA AAGAACAGAG GTTCAACTGG CTCACAGTTC AGCATGGCTG  
GGAGGCTCA GGAACCTTAC AAACATGGTG GCAGCAAAGA GAAGTTCCAA GCAAAGAGGG AAAAGCCCCT TATAAAACCA  
TCAGATCTTG TGAGAATTCA CTATCATGAA AATAGCATGA GGGTAACTGC CCCCATGATT AATTACCTC CCACAGGGTC  
CCTCCCATGA CAGGTGGGA TTATGGGAAC TACAATTCAA GATGAGATT GGGTGGGAC ACAGCCATAC CATGCCAGCT  
AGAGAGCCTT AAGAAAGTCA CCTAATCTCC ACAAATAAAA GGTTCCTAT TTGTTCAACA AAAATAATGA CACCCCTTTT  
ATGGGATTTT TGTGAGGACA AATGATAACT AACATAGCCT TGCATAGTGT CTGGCACAAA ATAGTACTC AAAAAATAAT  
AGAAACAACA TTTAAAAAAT GTAGACTTTA TTTTITAGAG TTTTATGTAC AAAGCAAAAT TGAGCAGAAT GTACAGAGAT  
TTTCCGTATA GCATCCCTA CCCCCAAGCA CAGATAGCCT CCCCAGCTG CAGCATCCG CACCAGAGTG GTACAGTAGT  
TATAACTGAT GAATCTATAT TGACGTGTCA TTTTCATCCA AAATCCATAG TTTATATTAG GGATGCCTCT TGGTGTGTGA  
CCTTCTATGG GTTTTGACAA ATGTATAATG ACATGTATTC ACCATTACAG TATCATAAAG AATAGTTTCA CTGTCTTAAA  
AATCTTTGAT CTCTTCTTA TCCATCACTC CCTCCCCATT AATCCCTGAC AACTACTGCT AATTITCTGT TCTCCATTGT  
TTTGTCTTTT CCGTAATGTC ATATAGTTTA AATATACAGT ATGAGGATT TCAAACTGG TTTATTTTAC TTAGTAATAT  
GCATTTGATG TTCTTCCATA TCTTTTCAAA GCTTCATAGT TCAATATTTA TAGAATTGAA TAATATTCCA TTGTCTGGAT  
GTACTACAGT TTATGTATTC ATTACCTAT CAAAGAACAC CTTGGTGTCT TCCAAGTTT AACAATCATG AGTAAAGCTG  
CTATAACAT CTATGTACAT GTTTTTTGT GAATTGAACA TTTTCAGCT TTTTAGCTCC ATTCCTAGGA GTGCAATTGC  
TGGATTGTAT CAGTAAGGTA TGTTTAGTGT TGAAGAAGAC TGCCACGCTC TTCCTAAGT GATGTACTGT TTGCACTTCT  
CACCAGCAAT GAAAGAGTTC CTGTTGCTCC ACATACTCAC CAGCATTTGG TGTCTGCAAT GTTTGAGCA ATAGCATTTT  
GATCTAAGT TTTCTAGGTA TTTTITGA AGGAAATAAT ATGACAGATA ATAGAGAAAG GATATACGAG GACAGTTCTG  
TCTTTTATTT ATAGTCCATC ATTTAATGAA GGACTCTGT CACACTTGGT ATTTTAACT CTGATCCTCC TCTCCCATGA  
ACTCTGACAA TCTCTAAAT CCTGTGCT GGCACATG GTTGTGTATC AGGCCCTGT TGGTCTGTCT GAAGCATGGC  
TTTTTTTTTT TTTTTTTTTT TTTTTTGTAG ACGGAGTCTC GCTCTGTGCG CCAGGCTGGA GTGCACTGGC GCGATCTCGG  
CTCACTGCAA GCTCCGCTC CCGGTTTCC GCCATTCTCC TGCTCAGCC TCCCGAGTAG CTGGGACTAC AGGCGCCCGC  
CACCAGCCT GCGTAATTTT TTGTATTTT AGTAGAGGCG GGGTTTCACT GTGTAGCCA GGATGGTCTC GATCTCTGA  
CCTTGTGATC CGCCGCTC TGCCTCCCA AGTGTGGGA TTACAGGCGT GAGCCACCGC CCGGCGCTT TTTTTTTTTT  
TTTTTTTTTT TTGAGATGG AGTCTGTAC TGTGTACCC AGGTGGTGC AGTGATGCAA TCTTGGCTCA CTACCAACCTC  
CATCTTTCAG GTTCAAGTGA TTCTGCCACC TCAGCCTCCC AAGTACCTGG GATTACAGGT GCCCGCCACC ACACCCAGCT  
ATTTTTTTGT ATTTTITAGTA GAGACGTAGT TTCACCATGT TGGCCAGGCT GGTCTCATTC CTGACCTTGA GTGATCCACC  
TGCTTGGCC TCCCAAGTG CTGGGATTAC AGGATGGGT CATCATAGT GGCCTGAAGC ATGACTGTTG CTTTAATCAT  
ATGAAATACT GCTCTGATT GTTATCTATT TGAATAGCCA CACCTCTGA GCTAAATTTG AAGCTTTTAT GGAGCAAAA  
CCATATTTAT ATATATTAGC ATGATACCAT GACACATATC AAAAGCTGTT ATATATTGTT ACGTGAATTG ATTTCTTCTC  
AGTTAAGAGG ACCTCTGTAG TAGCACTTTC ATACCGTTAA TTTTTCATT TGTGCCAGC CCTACTCTG TGAAAAATGA  
AATGAATCCT GTTATCAATT CCTCCCAGG CCTTTCTCC TTGTGGACAA TGTGTGGCTC AAGAGAAAAAT TCAGTCAGTA  
AATTGTTC GTGCACAAC TCTTTATCAC CTCTCATGT TCTGATGAGA GATAGAACAG AACATCCATC CAGTGTCTTA  
CAAATGTCT GGTATATAGT AGGCACTCAA TAAATGTTTT TTGAATAAAT GCATACATGA ATCTATTCC TATATATAGT  
ATGTTAGACA GATCATTTAT ACCCAAAGAT GCCCAAATGC TGATCCCCAG AACTTGTGAA TATGTTACAT TTCATGTCAA  
AAGGGACTT GCTAATGTGA TTAAGGATTG AGACCTTGG ATTGTAAGAT TATCCCGAT TAACCAGGGC CAATCTAATC  
ACATGAGACT TTAATAAAGC AGAAAAACAT TCCCATCTGG GTGAGAGAGA GATGAGACAG AGTAAAAAGG AAAGAGATTG  
AGGGCATGAA AATGACTCTA CCCACTGTTG CTGGCTTGA AGATAGAGGA ACTAGGCCAC AAAACAAGGA GTATGAGTG  
CCTTAAGAAA TAGGAAAAAG CCTCATCTG ACAGCCAGCT AGAAAGCAGT CCTCTGACCA CAAGAAATTG GATTCTGCCA  
ACCACTCAA TGAGCAAGGA AATGGATTCT CCCCTAGAAC CTCCAGAAAG GAACACAGCT CTGTAATGCC TTGATTTTGG  
CCAGGTGAGA CTTGTTTCTG ACTTTTGACC TATGGAATA TAAGATAATA AAGTTTATTT GTATGCTGCT AAATTTGCGG  
TAGTTTATTA CTGAAGCAAT GGAAGGCCAA TACAGACAGA ATATACAGAG AGAAAGAGAA TGAGTTCTTT CTGTATAATT  
TGTAATAATT TGGGTCTTCA CTGGACAAGC TTCACAGAGG ATTCAGTGT TCCCTAGCAA ACCAGCATGT CCAGTCTGCT  
AGCCTCCCTT TCTTAGGCCC AGCATATGTC AGCTGTGTGC ATAGAAAAAT CAAAGCAGGA CCTGAGTAG TTGGAAGAA  
AAGATGGTTG GAAATGGGT GCATTCAAG TGAGGATAGA AGAGGTAGGA GACCGGCATC TCTTCTCAT ATGTCCCAGG  
CTGACTCTTG TGAGTTGTTT TCCCTGGAG GCTATCGATG ACAGTACAG TAACCTGATG GAACCTGGAT CATGATGAAA  
GAAGTAAGTG TCAATGGCTC GACTTCCAA GGAATCTGAT GTCCACAGC ACTAGCTAAA CAAAGCCAGT TGGAAATGAG  
CTTAAATGGG GAATTTCTG AATATATTCC CTATTGTTAG GAAGCCAGGT TGGCTTCTT GCCTACAATT ATGCCAAGCA  
GTCAACTAT AGAGTCCCTA GGGACATGT ATTAAGTAT TCTTTAACA CAAACAATT AATAATCATT TATACTAATA  
GCAAAACGGC CAACGGCTGA TATTCCACTT GAAGTAGAAT TGGTATCCA ACTGGAAGAG AAGACAGGAA GACGTGATCT  
CCAGGGAGCC ACTAAAAGGA TTGGCACCTG CCTCTGGATT CCCCTTTTCC TTATATTACC TCTCAGCACT GGCAGGCCTT  
TATTTTCAGGA TACAGTTTCA CAAGTATTAT GTCACGCTC TGAGAATTAT GTTGGTAGAT ATTTGCTCCT CTGGCCAGAA  
AGACCTAGTT TGGAGCTGG AGTCATGAAG GTGACATACA TGTAGCTAGT GACATAAGTG TAGCTAGTAA AAATAGTGAG  
TAATGGCCCT GAAATCTAT TGAATGCCCA AAGTCTGAC CAGGAACAG CATGCTCTAG CTATCTCAC AAGGAACCTG  
ACAATTTTCT TCAAAAATCC TAGTAGCTAA GATTTCTTAG TAACAAAGCC ACTAAGGCAC AATTATGATT AACTTGACCC  
TTAGGTGACT TTTAAGGACT ATTCTATAAA ATATTACAAC TAATAGTGA TCCAAGCCAG CACACTCTGC TATATAAGAT  
TAATTGACAG TGTCCACAT GGTAAATATA GTTGTTCAT AAATACATTA GAATTCATT GCACTTTCTA CACAGCCCA  
AGTCCAGAAC TTTCCCAAG ATAGGTCTAT GTTTGCAAT CTGCTACTCC ATACAGAGAT TTGATTCTAC TTGGCAATT  
AGTGTGCTT ATATGTGACC AGTTAGTCTG TTTTACTTAT CTATGCCTTA AACATTACTA TACTTACTAA CTCCAAGATG  
CCTGGTCTCA ACTTGACAAA AATACCCCAA GTTGGGAAAT CCTTATGTGA ATATGTAGAT AGTCACAATT GCTGGTTGAT  
GATGATCTGT CTTTCTCTGT ATTTGAGAAA ATGGAGATAA AATGGACCAA TCCAATAAT GGATTAACA TGGGAATAGG  
TGAGAGAGAG AGGAATAC ATGGTGGCTC TCAGTGTCTG CTTAGGCAG TAAACACTTT CGTTAATAAA GACGGAAAAAT  
AAAAAAGGAA TAATGGTGT CTAGGGGAAA ATAATGAGCT CAAGTTTAA CACTCTGAGT TCCCGAGTG GAGACATCCA  
GGCGCATTTA TCCAAGAGGC AGTTGGAAGC AACGTTCGG AGCTTAGGAG AGAGGCATGA CCAAAAGCTG GTGGGACTGT  
GAAAAGGTAT GGCCATTCTG GAAAACTGTT TGGCAGTTT TTAGAAAAAT AAACATGTAC TAACAACCCA GCAATTGTAC  
TCTTGAGCAT TTGTCCCAAG TAAATGAAAA AAAAAAAGG CATTTTTTTT ACACAAAAAC ATATACATGA AAGTTCTAG  
AAGTGTATT CATAAAAAAC TGAATAAAC TGAGATGCTT TTTTGTAGT AATGCTTAGT CAAACGGTGG TATTCATA  
CAATGGAATT ATGCTTAGCA ATAAAGAGAA AAGAACTATT GATACATGCA ATAACACAGA TGAATCTCAA AGGAATTAAT

GCTGAGTGGG AAAAAAAGCA CATCTCAAAA TGGTATATAC TGTACTATTT TATTTACTTA ACATTTTAAA AATAGCAAAA  
TCATAGAGAT GGAGAACAGA TTAATGGGTA CTGTGTTTTG GGATGGGGAG TGAGAAAAGG GTAAGGTGTA AATATAAAGG  
GGTAGCACAA AAGAGCCTTG TGGTTGAAGG ATCTATGTC TTGGTTGTAG TCGTGATTGC AGGAATCTAC-ATGTGATAAA  
ATTGTATGGG TCTACATACG CATAACACA AGACATGTA AAACATTGTC ATTGAGGGAA ACTGGGTAAA GGAACACAG  
CATCAGTATC CTAGTTTCAA TATCAGACTA CAGTTATACA AAACATTGTC ATTGAGGGAA ACTGGGTAAA GGAACACAG  
GACATTTGGC ATATATTTT GCAATTTCTT GTGAATCCGT AATTATTTAA AAATAACAGA TATACTACAT ATCAAAAATT  
TAATGTCATA AAGTTGATGA GTTTACCTAG TGGATAGCTT TGTTAATATC TGCTATAAGA CTACTGAAA TGACAGTTAT  
GCAAGTATAA GCTCAGAGAA CTTTCTCTCC CTTTCGTAAA TGAATGAGC AAAAGAAATG AAACAGGAAA GGCAAGCAGT  
ACTGAAAACA GGAAGGGCT CTTCCCATTA TAACTATATC TGGGACTTCA ACAGCTATTC ATCCAGAAAC ACAGCCTCTT  
GCGCTAAGAG GAAACTTTGG ATAACAATAT GTTTTCACTC TCCAAGAGAG AAAATGGATA GATTAATTTT TAAGAAAAAA  
AAAAAACTT CACCAATTTT ATGCTGTGGC TTGCACCTT AATCCAGCT ACCTACAAGG CTGAGGTGAG AGGCTTACTT  
GAGCCACGGA GTTCAAGGCT GCAATGAGCT AGTATTGATT GTGCTATCGC ACTCCAACCT GGAGTACTAA GCTAAGAGCT  
AAGAACACAG CTGAGAGCGG AGAAGAAACA AACAATCTG ACCAATAACC CCCACTCCCC TCATTTTACT GGAGTGAGCT  
GAGACTGCTG GCAAAACATGG CTTTGTACCT AGCCTGAAC GTAGCAAAAG TCATCAGATA TTTTCCACC AATCAACAGA  
CAGAAGTGGG GAGAAAACAA TCGTAGTTCA TAATCAACA AAGCAGATAA ACGAAGGCCA TGGTGAGGGA TGGAGAGCAT  
TGTGATATAT CAAAGGCGAG CTCATTTAAA ACTCAACCA AATCCAAAC AAAATATATA TTGAATATG TATTAATGCC  
AAAGGAGCTT GAGTGAGCTT TAGCACAAC CCCGCCCTCC AGCCCCCACC CAAAAAATC ACTCTGTTCT CTCCCCATTC  
TTTGATAGGC ATACTTGCTG TTTTCTACA GCCAAGGTAC AGAGGGGACT TAGAGGAAT AGAATCTAA TAACTGCTA  
GCAGGAATGT AAAATGAAGC ATCTACTTCA GAAAACCAAT TTATCAGTTT CTAGAAAGTT AAACATAGAC CCACCATGCA  
GCCAGCCAC GTTCAAGGCT CTTCAAGGCT CTTCAAGGCT CTTCAAGGCT CTTCAAGGCT CTTCAAGGCT CTTCAAGGCT  
TAGCCTTGTG TGTCAACTTG GCTAGGCTAT AATACCCAGT TACTGAATCA AATAGTAATC TAGGTGCATC TGTGAAGGTA  
TTTTGTAGAT GTGGTTAACA GCTACAATCT GTTGACTTCA AGTAAAGGAG ATTGCTCTG ATAGTATGGG TGGGCTCAT  
CCAATCAATT GAAGGCCCTA AGAGCAAAAA GTAAGGTTT CCGGAGAGAA AGAAATCTG CCTCAAGACT GCAGCCTCAA  
CTTACCTAGT AGTTTCCAGT CAGCCAGCA GCTTAAAGT TTGCTAGGCA TTATAATCAC ATCAGCTAAT TCTTAAAT  
AAACCTCTTT ATATATATTG ATACAATGAA TGGTTATAGC AGCCTTATTT GTAATAGCCA CAAACTGGAA ACAACTAAA  
TGTCTTCAA TAAGTGAATA CATAACAAA TTGTGGTATA TCCACAATTT TTACGCAGCA GTAAAAAGGA ATAAATGGTT  
GAATAAGGAA TAAACACATA ACAAGGATGA ACCTTAAAC CGTAAGGCTG AATGAAAAAA GTCAGACAAA ACTAATACAT  
ACTGAATTAT TCCATTATA TTGAAGTTCT AGAAATGAG GACTAACCTA TAGTAACAAA AAGCAGAAAA ATTTTGGCCA  
CTGGTATAGG AGGGGGCGCA GGTATTGTAG AGTATCTGAG AAGGACAAC TGGATAAAG GGGGCACAAG AAAACTTTTG  
AGGGTGATTG ATATGTTTAT TATCTTGTGG CATGGTTTCA TAGGTGCATA CATATGTCAA AACATCAAGT TATACACTTT  
TAAATGTTT AGTTTACTGT ATATCTATTA TACTTCAGTA GAGAGGAAGG AAGAAAGTGG GCAGGGTGGG GGAGAGGAAA  
GGAAACGAGG GAGGAAAGGC CTAATAGGA AGGATTTTGG AGTTTAGATT TAAATGAT AAAGGATGTT TGACACTTA  
GGCATATAGT GAATATAGGA TTATGAGTCC ACAAAAACCA CAGGAAGTCT ATGTATGTTT ATACTTTTAA GTGAAGGATC  
AGTGGATTAT CAATCCCTA ATGCTTTGCC TCTCTATGAC TGGCTGCTGT CTTTCTCATC CCAATCTCC TTCCAAAGCC  
CCTTGCTTAA ATGTAAGCCT TCTTCTCTCC TTCAACACA TCTGCTATC CGTGACAAA TAAGTTTCC TTAACAGAA  
TGATACAGAT ATTTATTTGA CAATTAATAA TTTTGGCCA GAGTGTGATGA CTCATGCTGT TAATCCAGC AATTTGGGAG  
GCCGAGATGT GTGGATTACC TGAGGTGAGG AGTTGAGCAG CAGCTTGGCC AACATGGTGA AACCTGTCT CTACTAAAAA  
TACAAAAATT AGCTGAGTGT AGTGTGGCAG GTACCTGTAA TCCAGCTAC TCAGGAAGCT GAGGCAGGAG AATCGCTTGA  
ACCTGGGAGG TGGAGGTTGC TGTGAGCAGA GATCAGACTA TTGCATTCTA GGCTAGGAGA CAGAGTGAGA CTCGGTCCCC  
AAAAAAAAC ACATTTTCTT TTAATGTTT CTTCTGCTT GTAGGAAAAA GGCTCTGACT CTTAGCCTG GGCATCAGAG  
CTCTATCTAA ATGGACTTTA ACCTGATTTT GTGGCATTGA TTCCATTGCA GTACTTGTCC GCTTACTGGC CTGTGCTCT  
CTGCCACTAT TTTTGAATA ATGCTCTCTC TCCATCTTGT TACTCAACT ATATCCAACC TCTAAGGCTG TGCTCTACA  
AAGCTCCCC TGGCTACTTC AGCCACAGA GATATTTAAC TGCTCTGAG TTCCAGGACAT TCTTCTGACT CTTTAAATCA  
CATTTACTTA TATATGATCT TGTGATATT TTTGTGAGC TGTTTACTTT AATTTCTTC CATAACCTAT TCATTTAACA  
AACTCAACA TATTTTATA AATGCCAAGT TAGAAAAATA TTATTGATT TATATAGATT ATAGATATGT TTGAATTTT  
ATTTGGCAAT CTGCAAGTAG AAAAATAATT ATAATGTGGT ATATCTGTGA TAGAAGTATT AGTGCAGAGA CCATGGGGA  
CATAATCCAG CTGGAAGTT CAGGAGAGAT ACGTGAAGA AAGGACGTC GAGCCTTTT CCTACAGGCA TGAAGAAGAC  
ATTAAGAAAA ATTTTCTTT TTGAGATGGA GTCTCACTCT GTCTCCAGC CTAGACTGTG GTGGTGCGAT CTCTGCTCAC  
TGCAACCTCT GTCTCCCGG TTCAAGTGT TCTCTGCTC CAGCTTCCCA AGTAGCTGGG ATTACAGGTA CCTGCCACAC  
ATGGATGATA AATATGATCA TATTTCTTG TCTTTTCTC CTTCTTGTG TTTCCCTGAA GAAAGGAATG CTTTATATAG  
ATGACAACT CCCATTCTCA AGAACAAGGA TTTTGGACCA ATTTAATTTA ATCAGATGTC TGGCTTTGAC CTAGAAACAC  
AGTCACGAAA CTTGGTGATT AGAGACCAAT TCCCAACAT GAGCATTCT TAGGAAACAC AGTAAAGATC TGAGAGACCC  
AAGACGAGAA GGGCGAGAAA CCAAAAGCCA TCAGTTTGA TAGGAAACAC CTTGTTTAGC CTAATCTTTT TATTTTATT  
ACTCTATTAG TCACTACAAC TATTTCTGA TTGCTATGGT GATAGATGGT TTAACAACAG CTTCACTTAA GAATTTGCTAC  
ACCATGGTCT CAGTCAAAAA CACCAACATT TTTATTGGTA TTGACAATTA TGGGAATATC CAATTTCAAG AAGACAAGGA  
GACCTCTGAA CTTTCTAAAT GAAGACTCCA ATCTTCTGA TCTGATGGGA AGCAGCTTGG CAAGATTACC AACCACCACC  
ACAGAGAGTG GACTCTAAGC TAAGACTTAA AAGATAAGTA GAAATTATCC AGGTAAAGAT GTGTACAGAG AAGGAAGTAC  
ATCCAGGGGA AAAGAACAAT ACGTGCAAAA GTACGGAAAT GGTAAAAAGT AATACTACAT AGTCAAGGCC AAGCAGAGTT  
CAGAAGGGAT CTGGTGGTGA AAAATACGGC TAGAGAAAGC AGCAAGGATT GGCTTCTAAA ACCTATGTAG TATCTTGGAC  
CTTACCCTAA ATGTAATGAG AAGCTTCTAA AGAATCTTTC ATTTATTCAT TCATTGAACA AATATTTTGA GGCTTCTGT  
GAAGAACATC ATTTAAGTA GTAAAGATAC AGCAGTGAAT AGGACACATA AAATCTAGA TCTCACAGAA TTGACATTC  
AGAGAGGGAA AGGTAGACAA TAAATACATA AACAAATCAT TTAACAAGAT GATTTCAGAC AATGGTAGCT ACTGTGAAAA  
AAATGAAACA AGGTAATGGA CAGCGAAAAG GCACTGGAAG GAAGCCTGCT TACCTTTGCA TGGTTAGAAA AGATCTCTCT  
AAGAAAGAGA CCACATGTGA GCTGCGACCT GAAGGATACC GAGAAGCTAG GTGTGCAAAG ATGTGGGGAC AGAATTTTG  
GACTGAATAG CAAATACAAA TGCCCTTGGG TGCAAGCTTT GCCTGTTCAA GGACCAAAAA GAAGGCCAGT GTGCCTGAG  
CATACTAAGC ACAGAGGAAA AACTGTTAT ATGTGATAG TTGAATTATA AGTAGAGCCA GATAATATAG TCTCTTATAG  
GTCATAATAA GGCAACCAGA TTTTATCCA AGAGGATTTA AAAATCACTG GAGGTTTTGC ACTAGGGTGA GAGGTGTGAT  
TTGTATTTT AAAAGATAAT TCTGGAGAAT TAACTATAAT GAGGTAGGAG TAACTAAGT TAGGGGCTAT TTCAGTGGCT  
CAGACAAGAG ATAATGGTAG CTTAGACTAG GATAGTAGTC GTAGAAATAA ATAAAGTGG CACTCTACTT TGGGGGTAGA  
GCTATAATA GGTTTGGTTT ATGGATCATA TATGAGATA AAAAAAGAA AATAAATTA TAATGGTTCC TAGGTTTGA  
CTTGAGCAAC TGAATAAATG GGTGCTGTGA ATTGAGATAA AAGGATTTGA GAATCACAGG CTTTGTTTTG GAAGTTAAT  
TTGAGAGGCT TATTAGACAT CCCAGTGGAG ATTTAGGAGT AGTGGAGCCC ATTGAAAGGT AAGGGACAGG GTCAGGTGTG  
GTAGGTGAGG CTTGTGATCC CAGGACTTTG GAAGGCCAAG GCAGACAGAT CAGTTGAGCT CAGGAGTTTG AGACCAGCCT  
GGGCAACATG GGAACCCCT GTCTCTACAA AATATGCAAA ATATTACCTG GGCATGGTGG CATATGACTG TGGTCCAAGC  
CACTTGGGG GCTAGAGATG GAGGATGAGT TGCAGTACAG AAGCGGAGGT TGCAGTACAG CAAGATCTCG CCACTGCAAA  
CCAGCTTAGG TGACAGAGTG AGAACCTGTC TCAATAAATA AATAAGAAAC GTAAGGAAA AGGAAATTTA TCTGATCATT

GGCAAATGCA TAGTATTTAA AGCCAGGGGA GTAGATGAGA TACTCAAAGT AGGTGAAGAT AAGGAGGCAA TGAAGGCCTA  
GGACTCTGGT GTACATTTAG ATGGTTATAA GAGGAATAGA AACTGGCAAA ATAAGTAACA CTGAGCACCC AATGAGGTGG  
AGAGGAAAGC CAGGAGATGA AGCATCATAG AAGGCAAGAG AAGAAGGGTG TCAAAGAGGC GAGGCAGTCA  
TCAACTTCTG GGCAGTCAAA TAATATAAGG ACAGAAAAGT GACCATTGGA TTTGGAAATA TGATGAGCAC TTTGAGTGGA  
GTGTTGAGAC AGAAGACCAA TTAGAGTAGA TTGAGGAGAT AAGCAGAAAT GAGAAATAGT AACCTGCAAG CACAGACAAT  
TCTTGAGAGA CTTTCTGTG AAAGGAAACA GACACAGAGT CTTAGCATGT CTTGTCTTTC TATGGGAAAT GTAAATAGTT  
TGAGATCAGG GATAGTATTT TATTCTGCTT TTGTACCTC TACATTACCT AGCATAGAGC TAGCTAATGT GCACTTAAGT  
ATGTTCTCAA TCTTATCGC CTGAATGACT GGATGGGTGA AAGAATGGAT GGATGGATGG ATGGATGGAT GGAAGGATGG  
ATGGATGGAT GGAAGACTTC TGATTTGCCA AGAAGAGGAT ACTGGTAGCA GAAATAAAAA CAGCACTGGA GAAAGAAGAG  
TTTAGATTTT TATTCTTTGG TGTCAGTTAG ACAGGAAAGT AAGACATTAG AAGAGTCTT AGATAATTTA TGTAATTGTT  
CACTTAGGAT TTTAAATGT GATCACTGAT ATTGGACATG TTCCTAGTGA AGCATTTTTG GTGTTTCACT GGTGGAAGTT  
AATAACTGTA AAATATTTC CCGTTCAGGA CAGAAAAACA GAAAACCTGA AGCTCTATT AGAAAGTTCA AGATTCTCTG  
GGGTCTTAG GATTACTGT TCCCAAACT CTGTCAAGAA CAAGAAATG ACCTGTATAT TTAACGTGTC TAGGCAACAG  
TGGAAGACA ATTCTCAGAG AAGATTTGTT TTAAGAAGAC ACTTTCATA GGAATCAAAC AATAGCTTTC AGTGACTAAC  
ATGGTAAGAC ACAGGGGTGT AGCTCTTTC TTCCAACCTC ATGGCTGTG TACCTTACCT TTCGACCCCG TGTTCTGAA  
ATTGTTAAAT TCATAAACTT ACCAAGGACT AACCAGCTC TGGGGAATTG CTGTACTCT AGCAAACTTA CAATGGACAT  
ATTATAAGC CATAATGATA ACTGACTAAT AGGAATACC CTGAGTGA AATGAGAGAT CATTCTTTC AATGAGTTC  
CCTTGCCAG GCAACTACTG GGGAAAATGT CATGCAAGCA AAATTAATCT TTGAAATCCT CTTTTCCAT TTTTGTGTC  
TTCCTTTTC ATAGGCACCA GAAATATCAT GGTGCCTGGA TCTCATCTCT ACAGAAAAA AAAGTGATTT GATAAACTGA  
TTTATATTGT GTCCAAATGT GATTGTATTT TCAAAGATAA CCTAAGGGGA GAATGCTGTC TGGCCCAACA GCAGGCTCTC  
GACTTCATT GGCAACTGT GGCAATGGC TGGGAACAG GATGAAGAG TAGGTTTCTG AGTCCCTGG AATTATCCA  
TTTATGTAGC CACCTCCATG ACAGGAAGCC TCCCTACTCT TACTTCCAG TTTGTTCACT CATGGCAGCA GGTGCGAGT  
TAAATTTGTC TCAGTGACCT TTTATCTAAT AATGTGTTAC CTCTCTCT TAAAAAGTAC AAGGGACAAA TGCTCATGGT  
ATACTTTAG GAGATTGTGG CTCTCTATTA ACAGTATTTA TTCAACAAAC ATTTATTGAG CATTTATATG TGCATCATGC  
TAGGGACTGG AACCTAGTAA GTGTAGCACA TATTATTCA TTTAATCCTC ACAACAAACC CATGAGGTTG GTTTATGATG  
CCCAATTTT CAGAAGAAGA AACTGATATT CAGAACCAGT TAACTAATCT GTTCAAGGTC ATGCAATTTT TAAGATACAG  
AACCAAGAGT CAAAGACATG ATTTAAACC AAAGCTTTT CTGCTACTCC ACATTGCTTC CCTAGGTGAG ATCTGAGGCA  
TTCCGCGAAA ACAGAAGGGT CATAAGGCCA AGGGAAGACA AGCTTAGGAA AAAAAAGGGA AATGTCCTAA ATAAACAGCT  
TCTCTATTA CGAGAACCA CTAGTTTAA AATATAAGT GAAAAATCCT ATTCATTTA ACAATGTTAA AAAAAA  
GATAGAAGAA ACATAGGGAT AAATTAACA CATTTAGG ATGTGTAAG AACTAAAG ATGTTAATAA TGGCCTAAG  
AAAAAAGAAC TTACATGTAT GGGGAGATAG ACCATCTTAC TGGATTCTAA TATTTAATAG TCTAGGTGTT CCATTTCTCA  
CCAAATTAAT GTATACATT AATACAATGT CAAACGAAAT ATCTTAGGAA TTGCTTACAA ATTGTCAGAT AATTACAAAG  
TTTACCTGG AAATATAAGC ATATATGAAG AGTGAATGG ACCCCACCAC TCCCCCAAA AAAAAAAGG TCTGAAAAAG  
ACAGAAATCA AGGAGAGTCT TGCCTGCCAG ATACAAATG ATGTTAATAA GGTGTATTGA TGAACAAAT TTAATACATG  
TGATGCAATA GGCAGCAAAG CAATGAAACA GCATAAAAG ACCAGAATA TACCTAATTA TGATGAAGAT TTAAGGTATG  
ATAAACATGA CATAATTCAA ATCAGCAGAA ATTGGCATAG ATAGGGTTAA GACAAATAGC TAATCATTAG AGGGGAGGAA  
GGAAGGAGG GAGGATAAAA TTAGGTTCTT GCCTTCATCT TACATTAATA TAAATCCAG ATGTATTACA TTTAAATTTT  
TTTAAAAA AAACCAAAA AATACTGAA AAAAAATATA GTTGTATAT AGTCTTTTGA TGGGAATTT TTTTTTTT  
AGAGACAGGG TCTTGCTCTG TCACCTAGCC TAGAGTGCAA TGGCATGATC ATGGCTCACT GCAGCCTTGA ACTCCTGGG  
TCAAGTGATC CTCCAGCTC AGCCCCCAG GTAGCAGGAA CTACAGGCAT GCGACACCCC ATCCAATTA TTTTTTATT  
TTGTAGAGA CAGGGGTCTT GCTTTGTTT CCAGGCTTAT CTCGAATTC TGCCTTCAAG CACCTAGCC TCCCAAGAG  
CTGGGCTGAT GGGACATTT TTAACATAGT GCCACATTAC CTAAGATGAA AAGCTTGTA AACTACTAAT TTTAAAACTA  
ATATATATCA GAAATTTTAA TAAACAAAGT TAAAAAGCAA ACACAAAAA TTTGTAGCAC TTATGACAAA TATATGTATA  
TATATGAATA CAAAAAGAGC CTTTACAAAA CAGTAAGAAA ACAATGAATA CTCCCAATGG AGTATTCAA ACTAACTGC  
TAAAGCAAT TCAAAACAAA AAACATAAAC TATGATATA TGTATGTGA AAAGTTTAA CTTATCAAAG AAGTAAACTC  
TCAAAAGAA AAACATAAAA TAAGGAAATA GCCTTTTCC ACAAATAACC AAAATCTGTA AGAATACTGA GCTCGGAATG  
TTTCAGAAAA AAAAAAAT CATAACCTA GTTCGGCATG TAATTAATAT AGATCAGAAC ACTTTAAAA TATTATAGG  
CCAGGCACGG TGCTCATGC CTATAATCCC AGCACTTTGG GAGGCCAAG CCGGTGGATC ACCTGAAGTC AGGAGTTTGA  
GACCATCTG ACCAACATGG TGAACCCCTG TCTCTACTAA AAATACAAA ACTAGCCAGG CATGTTGGCG TATGCTGGTA  
ATCCTGGCTA CTCGGGAGC TGAGGCAGGA GAATTGCTG AACCCAGGAG GTGGAGGTTG CAGTGAGCTG ACATTGTGCC  
ACTGTACTCC AGCCTGGGCA ACAAGAGCAA AACTCTGTCT CAAAAAATAA TAATAAATAA AAATAAATA TTTATATACT  
CTGACCATC AATTGTCCA GCATAATTAG GCATGTGTAC AAGGTTTAC ACACAAGAA GCCTATTGCA ATATTGCTTT  
TAATGCTAAA AAAAATTGGG GAAAATGCTT TAAAAATATA GATTAAAGT GTACATTGTG GTACAGTCAT ATAATCAATA  
GTATACAGCT ATTATTTT TTAGCCACT GTCCAAATA TAGCCTGGCC TAACAACATT CTGTTAGGAT ACGCAAGCAC  
CGTGAGGAGA TCAGCTATAA AGTATCAGT TTCAACCA CTGCTCTTT GCTAATAACC TTAATGGCT TTTAAGAAG  
TAAAAACAA AGGCAAAATT CTTAGTCAG CCCTTAAGAC TCTCTGTAC TTAGCTCAA CTACCCTTT CAACAACACT  
GCCCTAACCA GGATGAGTT TTTGCCCCC TGGAGTACAT TCAGCTTTC CTTATCAAAC CTCTTTAA ATAAGTATCT  
TCTCCAGGAC CACTTCACT TCTCCCCA TTAGCATTT TCTATATCT CAGGCCTACC TCTATAAAG CTGTCTAAC  
CACTCAAACC CTAGCTTTT CTCTGAACCT CTAGAATTT TTTCTCTCA TTGGCCATT AGGTAAAAAG GTTTTTTACTG  
TTTATTACCT ACTCAATAA AATTTCTTT TTTGAGACA AGGTCTTACT CTGTCGCTA GAATGGGGG AAGTGGTGTG  
ATCACAACCT ACTGCAGCT CTACCTCCCA GCTCAACAGT CCTCCACCT CAGCCTAGTG AGTAGCTGTG ACTACAGGCA  
TGTGCCACA TACCACCTA CTTTCAATT TTTATTTT GTGAGATGGA ATCTCACTAT GTTACCAGG CTGGTCTGCT  
GATCTCAATT GATCCTCCA CTGTGGCCT CCAAAATGCT GGGATTACAG GCATGAGCCA CAATATCTGG CCCAGTAAG  
CTTTAAGGC CATTACATG AGGAACAGT TCTTTTACAC TATTTTATCA GCTAGGGCTT TGCATGGAGT AGGAGTTTAT  
TAAATGCGGT TGATGGGTTA ATCAATGTGT GAAAATATTC AGAGCCACCA AAAACAGATA TTATGTCTAT TCTCATCAAC  
AATCAAAAT GAGTAAACAG CCATTTTCTA ATACAGGAAA CCACAAAACA TTGAATGGTG ACATTAATAA ATTCCCCAG  
CAGGAGCCAA CAATTTTCT CATCTGATC CAAGTATGCA AACTGCAAAA GATAGGAAGC ACTAATGAGT GGAATTTGA  
GTAGAAGCAT TTCTTATGAA GGCTGTCTTG ACTGGATCAC ATTTTATTTG CTGTGGAGG TGCCAAATGT TGTGTTTAT  
GCTAATCTC CACCTCAGG AACACACAGT CAAGGATCCT ACCAAGTGT ACCGTCAAGT GTCTGTTGGC AGCTCAAGGC  
CCCAGCGTT TTCCCTTGCA CTAGGGAAAA GACATATTCC AGGTCAAAGT ACTCCCACTT TGATGCTACA GAGGAGTTGC  
TGAATTTGT GTCATTAATC TCTCTCTGT AGATCCCAAC CCGTTTAAA TCCCACTATC TGCCTACTCT GGGTCTTAC  
CAATTTACTA GATCATAGTT GGAGAAAAATC TACAAGCCT TGCTCCCTT AGATTTAAAC AGGTCTCTGT TGAATTTAG  
AATTGCTAAC TTCAAGCGG CCCTATGCG ACAGTATGCC TGTCAGTCAT ACTACATTC CTCAATTCCA TTCATGTGAC  
TGCTCCATC CTTCCCTCT CTCTCATAC TACTATTATC TCTTCCCCC TCCCTCATTT TTAAGTATG ATCTGTTTC  
CTATTCTCT GAGAAATAG AAGCCATCAA AAGAGAGTT CCACAACTC CTACTGCCTT ATCTAGCCCT GTACCATATA  
CTTGCATT CTCTCATTA CCATGGATG ACTGCCTATC TGTGCTCTA TCTAAGGCTA ACCCTTCCAC TTCAGTTTTG

AATATTATCA GCTCTTACCA ACTCAAGGCC ATTGCTCTAG CAATTCTCTC ATTCTCTCTC ATTTCTTCC ATCAAGTTTT  
CCTTTTCTTC AATTAACAGA GTAGCTCCTA AAGGGAAAAA AAAGTCTTCT TTTTCAATGC TCATCATCAC TGGCCATCAG  
AGAAATGCAA ATCAAAACCA CAATGAGATA TCATCTCACA CCAAGTAGAA TGGCAATCAT TAAAAAGTCA GGAAACAAAC  
GGTGTGGAG AGGATGTGGA GAAATAGGAA CACTTTTACA CTGTTGGTGG GACTGTAAAC TAGTCAACC ATTGTGGAAG  
ACAGTGTGGC GATTCTCAG GGATCTAGAA TTAGAAATAC CATTGTGACC AGCCATCCCA TTAAGTGGTA TATACCCAAA  
GGATTATAAA CAATGCTGCT ATAAAGACAC ATGCACACGT ATGTTTATTG TGGCACTACT CACAATAGCA AAGACTTGGA  
ACCAACCCAA ACGTCCAACA ATGATAGACT GGATTAAGAA AATGTGGCAC ATATACACCA TGGAAATACTA TGCAGCCATA  
AAAAATGATG AGTTCATGTC CTTTGTAGGG ACATGGAGGA AGCTGGAAAC CATCACTCTC AGCAAACTAT CACAAGGACA  
AAAAACCAA CACTGCATGT TCTCACTCAT AGGTGGGAAT TGAACAATGA GAACACTTGG ACACGGGAAG GGAACATCA  
CCCACTGGGG CCTGTTGTGG GATGAGGGGA GTGGGGAGGG ATAGCATTAG GAGATATACC TAATGTAAAA TGATGAGTTA  
ATGGGTGCAG CACACCAACA TAGCACATGT ATACATATGT AACAAACCTG CACGTTGTGC ACATGTACCC TAAACCTTAA  
AGTATAATAA AAAAATATAT ATATATATAT AAAAACAATA AAAATAAATC TTCTTTTCT GCAGGATCAG TCCATCACA  
CACACACAGG CTGTGTTTTA TGTGTTCCC CAGCTTAAGA GATCGTTCTC CAGATCCAC TGCTCCTTCC AGTTGTACCC  
TCAGTTCTCC ACTTCTTTTT GCTGATAAAC TACTCTAACT AGTTACATAT GATTTCTGTC CCCAGGTCCC CTCCTCAGT  
TGTTTTGAAC ATAATCATTT ATATCATTTA TCATTTTCAC TCTAATTGCA CAACCAAAAA CTCCCTTTTT TTTTAGATGG  
AGTCTCACT TGTCACCTAG GCTGGAGTGC AGTGGCATGA TCTCGGCTCA CTCCAACCTC CGCTCAGGG GTTCAAGTGA  
TCCCTGCTCC TAGCTCCTG GAATAGCTGG GATTATACCA ATGCACACC ACACCTGGCT AATTGCTTTG TTTTGTGTTG  
TGTGTGTGTG TGTTTTTTTT TTTTTTTTGA CAGAGTCTCA CTCTGTGTC CAGGCTAGAC TGCAGTGGCA TGATCTCAGC  
TCACTGCAAC CTCCACCTCC TGGGTTCAGG CGATTCTCT GCCTCAGCCT CCCGAGTAGC TGGGACTACA GGCATGCACC  
ACCATGCCAG GCTAATTTTT TTGTATTTT AGTAGAGACC AGGTTTCACC ATGTTGGTCA GGTCTGGTCTT GAACTCTGA  
CCTCAAATGA CTGCGCAC TGGACCTCCC AAAGTCTGG GATTACAGAC TTGAGCTACT GCGCCGTCTT ATTTGTGTT  
TTTAGTAAAG ACGGGGTTT ACCATGTTGT CCAAGTGGT CTCAAACTCC TGACCTCAAG TGATCCGCTC GCCTCAGGCC  
CTCAAAGTGC TGGGATTACA GGAGTGAGCC ACCATGCCTG GCCATAAAAC TGCCCTTTGT TAATATGACT GTTGGCCTGC  
ACATTGTCAA ATCCAGTGGC ATTCATCTTA CTCGGCCAAC CTACGGCATT TGACACTGTC TGTCTTCTCT TCTGTTCTC  
TATCTGTTT CAGTACTGTC GCCTGGCTTT CTTTTACCT CTTTTATATG CTCTCCAGT CTCAGGCTCC TTGGGGAT  
TGAAGGTATG TTGCATTTT CTATTCATG AATAATGACA AGTAAATGATC ACTTAAGACA TTAAGTGGT AGTTCTTTA  
CTAGGATAAA AATAATTTT TCCCAACAT GGGGCATATT CCATTTCCAG TCTGACTGTT CTGTGTAATC TTTGTATTCC  
TTGGCAGCCC CTTTTATATC AGTTTCATCTA CTGTGCAGGA AATTGGACAA ACATTTCGAC TGGTATAACC AAATACAGTT  
GAACTTTGG CTGACTCTT AGCTGAACTC ACCAAAAATA ATTTCTGTAA GAGACTGAGA CGTCTACGAG TAGGTTTTT  
AGAATTAGTA AACATAAATC AAGGATACAC AGGTAGATTG GAATTTTCA TAAACAACAA ATACTTTTTT AGTATGTCTA  
CTGAAATATT TGTATCTTAT CTGGCAATTC TACCTGGTAC AGAACTAATC CATTCTCTTG AAAGATCTTG ACTCTGTAAT  
AAGTTCTTTG GTGATGGAAG GGAGGTATTT CTGTAATTAG AGTCACTGTC TTCCTCCAG TTTTATATCC TGGCCAGAT  
CTGCAATGAA CACACGACAG AATCCAGGGG GGATGAAGAT GGGTGCTTTG CAGGAAAAAA AAATAAAAAA CATCTGAA  
AGCTTTTGTG TTAAGAAGAT GTGATCTAAA AAAGAAGACA GGAGAACCTT CTGTCTGCAC TTATACATAG AACAACTTG  
GCGTCTAGAA GCTGTGCCCT GTGGGAAGTG GTGGTGCTTG GTAAGAGATG CCAGGACCAG TGGTACCCAC TGGGAGCACT  
GCCAATACCC AGCAAGGAGC ATGGGTGCAC AGTAAGGCAT TGCACTGTGA TTCAGCATAA AATAACAATA AGGGAACGTC  
ACGGAGAAAA GGGCAGACTT CCTTTGTTTA GAATGTGGGA AATGTCTTCT GAAAAATGGT AGTAAAAAAG CATGCTTGA  
TGGTCACTC CAGCAAAAC TGACTAATCG GGGGTCAAGG ATACAACCCC TGCATCATAT GTTTGTTTCT GTTGGCTGGA  
CATGAGGTTT ACTGTGACCA CTGTGGTTTA ACCCATAGT CTCCTGGAAA TACAGCCAGG TCAAGAGAGC TCCACATAAA  
ACATAATCAA AAAAATAAAC TCAAGTTTCC ACTGATCAGC TTTTCAACA TCTTATCCTT TCACTAATCT TGGAGCAAGA  
TTTGAGAATT GGATGGCTAT TTGAGGGCTA TTCTGCGCT TTAGTTCAAT GTTTTGTCT TCTTTTATTA GAGAATATG  
GTTTTTAT ATATTACAC TTTAAGTTCT AGGTACATG TGCATAAGCT GCAGATTGTG TACACAGGTA TAAATGTGCG  
ATGTTGGTTT GCTGCACCA TCAACTCGTC ATTTACATTA GGTATTTCT CTAATGCTAT CCTCCCCCA GTCCCCCACC  
CCCCGACAGG CCCTGGTGTG TGATGTTCCC CTCTCTGTG CCAAGTGTTC TGTATATGTG ATAGATTACG TTTATTGATT  
TGTGTATGTT GAACCAGCCT TGCATCACAG TCATTGCTT ACAAGAAACA AACACTTCAC AGATGGATCA TTATGTGTGA  
TAAGTGAAT CCAAGGATTT ATGCTCAGAG GTGGGCTTAA CAGGTAGGAA GAGCAGTATT TTCTTCAAT CATGAGTGA  
TGCAGGTTTT TTTTTCTT TTTGAGATGG AGTCTCACT TTTTACCAG GCTGGCGCG AGTGGTGCAG TCTTGCTCA  
CTGTAACCTC TGCCACCTGG GTTCAAGCAA TTCTCTGCC TCAGCCTCCC AAGTGGCTGG GATTACAGGC ACCTGCCACT  
GTCTCCGGT AATTTTTGTC TTTTATAGT AGATGGGGT TCACCATCTT GGCCAGCCTT GTCTTGAAT CCTGACCTCA  
TGAATCATCT TTCTCAGCT CCCAAAGTGC TGGGATTACA GGCATGAGCC ACTGCGCCCA GCCACAGGT TTTTCAAGA  
CTAACTTAA TAAAAAATAA AAAATTTCCC AATGAATAT AAACTAAGAG TGCTAACTG TGATAGACT TTTTCAAGA  
ATGCCAGTT TCACAAGTGT CTATAGAACA TGTAATTTAG ATAGGTAAGA TGAATTTTG ATAATATTG ATGGCAAAT  
TAAACAGTA TACAACAAAA ATAAATTTCT AAGCCCTCA ACCAAGTGA TGGACTCTT CTCTCAGCA AAGGAATACC  
AAAGTAACT TGAATAACTA GTTTTGGCCA GGATTGGGG TAGGTGGGG AAGCCCAACA TGACTCATT TTCTCTCTC  
CCTTTGAACT TCAGGCACA CTGAATGCA GCAATTGAG TAAACACAG ATCTTAAGAG TGACAAGCCA GACTCTTGT  
AGCAGAGAGC CAGGCCCTGG AAGAAATCAA GTTATTTTAT CCAAAAAAT ATTTCTTTGA TATATTTTCA AATGGCCCTG  
CAAAGCTGTC TCTGTGGGG AAAATTGACA TGCTGTACAG AATTCCTTC TCTTTCCAAG TTTTACTGA TCCAGGAGAG  
ATTTAACTAA GAGGCTAGCA TGTTTTTTTT TTTTTTTTT TGAGGCGGAG TCTGTCTCTG TTGCCAGGC TGGAGTGAG  
TGGCGTGATC TCAGTCACT GCAACCTTCG CCTCCGGGT TCAAGCGATT CTCCTGCTC AGCTTCCGA GTAGCTGGGA  
TTACAGATCC ATGCCACTAT GCCCAGCTAA TTTTGTATT TTTGTAGAG ACAGGTTTC ACCATGTTGG CCAGGCTAGT  
ATTGAACTCC TGACCTCGTG ATCCGCCAC CTCGGCTCC CAAAGTGCTG GCATTACAGG CGTGAGCCAC CGTGCCAGC  
ACAAGACAT TACCGTCTAT TCTCTCTGAA GCTACTATCT AGAGGCTTCA TCAACATAAT AAGACCTTG GTCTCCCAA  
CTCTTATCT TCTCTATTA GTTCTACTG ATTCAGGT TTAGATAAT AACAACTTT TCAACCAAT GCCAATCAGA  
AAGTCTTTGA ATCCACCTAT GACTTAAAG CCCCACCTCT TCAAGTTATC CCGCTTTCT GGAAGTGAAC AATGTACACC  
TTATATGTTG TGATGGATAT CTGCTGTAA CTCCATTCC CTAATAATGT ATAACATCA GCTGTAACCC AACCACCTG  
GGCAGATGTT TTCAGGAAT CATGAGACTG TGTGTCAGAC CTGTGCTACT CATATTGGC TCACAGTAAA CTCTTTTAA  
TATTGTATAG AGTTTGGCTT TTTTCATTGA CACAGGAAAA ATAAAGAAAT GGAAGGTCT TCATAGTCA CTGAGCCAG  
TTCATATCTG ACTGAGGTA TACAGTTGAG TGATTGTAG CTGTGCTACT TAGATTGCTA TCCATTATCT AGAAGCATCA  
GGATCACGTG GGACCTATTG GAAATGCAGA CTTCCTCTCT AGAACCAGG ACCTTGGAA ATTCTTGGCA CATAGTAGGT  
GCTCAATACA TATTGAATCT CTAGGTGCAA TTCAATTAAT CATGAATTA TGAATTAACA CGCTCTCAAA GTTTAGTGCT  
TTTTACAGA CTAGTCTTTC TGCTCTTAA GCATCAGCT CACCAAGCTT CCAGTCTCAC TCCCTTATA GTCTGATTAA  
AATCTGCTTA CTGTGAGTC TGAGATCAAG TGTATCTCT TCTGAGAAGT CTCCCTCAC TGCCCAAGG GAATTTCTC  
TCTATTTTAG CACTGTCCCA GTTGACTTGT CATTATCTA GTCTTTTCA TATTAGTTGT TTTTCATATA TATGTTATTA  
AGGAACTAG TCATTTCCC TAATAGAACA AAATTGCTGG CTTTGGGGT TGGCAATGGA GGGGAGGCTC TTCTGAAAA  
GGGGGAAGAG TGTTCTCTA ATATTTTCT TACGAGATT ATGTTGCTCA TCTTAGCTT TTAGTCCCC ATTGCTGCC  
TACAGTTGGC AGAGACCATC TGTTCTCTCA CTGTCAGGAA CTGTCTCAAT TCTGAAGTT CAGAGTCAAA AAAGAAGCAA

GTTCCTAG CTCTTGATC AACTTTCAAA GTTTTACTTC CATTTGAAAA TTTACTAAGT CACCAGGAGA TGGTTTATAC  
TGAGAAATAT CCACTCATAC TCCTCTCTT CAACCTTCTT CCATATACAC CCTATTACAG GGATATAGTC TTA CTCTATA  
GCTCAAAAGG ATGACCCCTAT CAGAAACCTG CACAGTATGT AAAACATTCT CACCAGAGGT TCACTTGTGT ATTTCACCCC  
TAGAATGGAA GCTCTACAAA AGCACAGAAT GTATCATTTT AACTTTAGAT TCTATTTTCA CACCCAGTGC TTGACACATG  
ATTTGAAGTT AATATTTTATT TATCAAGTGA TTGTTTTAAA ATCATGACTC ACTCAACAAA GTTATAAGAA TAAGAATAGT  
GTTACAGAAT TGGTATACAC AAGCTGACCA TAATCAACAC ACCTATTATC ATTTTTTTGC GACAGGTTCT CGCTGTCTCA  
CCCTGGCTGG AGTGGAGTGG CATGACCAGG GTTCACTGCA GGTTTGAAGT TCCAGGCTCA AGCAATCCTC CCACCTCAGC  
CTCCACATA GCTGAGCCCA CAGGTGTGTG CCACCATGTC CAGCTAACTT TTTAATCTT TGTAGAGACA GGGTCACCTT  
ATGTTGCCCA AGCTGGTCTT GAACTCCTTG GCTAGAGAGA TCTCTCCTCC AAGGTCCCTC AAAATGCTGG GATCTCAGGC  
AAGAGCCACC ATGCTGTGCC ATAATCAATA CACTTTTAAG AATGCTAGAA TGTATATCA GATGCATACT TCAGCACTAT  
CTCAAGCAAA CTGGGGTGTG GGTATTCTA CATATAAAGT TCAGCAGTGT TGTTCACAG TCCCAAACTC CAACCTGAGGT  
CAAATGTAGG GTGCAGCAAG GTCACCTGGG CTGTCATCAA GGGCTCTCC TTGCACTCTT GCCAACCTTG TTTCTTGATT  
GTCTCTACCA CCATGAGTCA CCAGCAATCT CCCACAGTCA CTGTTTTAAA AGTTCACAAG TATTGTGTGA GATTCAGGCA  
ACCCCTTGAC TCCCTGATTG CTTGGTCTTC TTCCTGGGC TCTACCATTT TTTTCCCCA GCACTCTTTC TGCTGTCTTA  
AATTTTAATT CATGCAATTC CATATGTGTT TCTCTATCAT TCTTCATCTC TTTCTCTCC CTTCATCCA ATTTTGTGTG  
TCTGTTTGTG GTGCTGCTTG CTTTAATACA TTTCTCTTT TCTGAGAAGG CTGAGTCCA AAACCTCAG TTACCTGTG  
TTCTGTTTCC CGTTAGTTAA TCTCCGAACC TTCATAAATT AAATCTGACA AAGTCCCTC ACTAACCAAG GAAATGAGCA  
AGTCACAGTA AAAGGGGCAC ACACAGAACA CAAATAGACC CAGGGTCTTT TCTGTTTATC ACTCAGCTTT TTATAGGAGA  
TCCAGGAGAA ATGAAGTGA AAGGGAAGTG TGTGAGTTA CTATACAACA CAAGAGTAAA CTTCCTTATA AGTGGTAATT  
TTTTTTTACA GGAATAATTG AAAATGGAAA TTACCTTCTC TACTCATAGT AAGTACTCAG TCGTGTCTTG ATGGGATGAG  
AATGTGTTTG AGCTTTAGTG TAAGGCAGAA TCTGTTTAG TCTGCCAGTA TTGGAGAAAA ATAAACACA AAGGACATGA  
CATGTAGGAA GTGGCACCTG GGAGGGTCTC AATTCTTCTT ATTACAAAAA TGCCCCAGAG AAATAAAAAAG CTTGTGTACA  
TGTGAGATG GGAGAGTTCT CTGGCCCCC TCCAGGAGTG TGTGACAGTG GGGTGGCTCT CTGCTGCGCC ACCATGAGCT  
CAAAACCTC ATAGGAGGGG GAGCACACAG GCAGGAAGGT GCAGGAGCTG GCGAGCTCT TGGGCTCTG GCGGCTGTG  
ACTGTCTAGA GTGGGGTGGC TGCAACTCCT GAAAGCCCAA GTGGGCACTG GTTACAGTGC ACTCTTTCAG CTTGTCTGC  
TGCAGCTTAA GCGTTAACCA GCTCAGTTTC TTCTTGGTAC CCAGGTCTT GTCTGGCATC CAGGAAGAA CTGTTACAC  
ATGGACTTGA AGGATGAATG TGGGAGTTT ATGGAGTGGT GGAGGTGGCT CTCAGTGGGA TGGATGGGA GCTGGAAGGG  
GGATGGAGTG GGAAGATGAT ATTCTCTCTG AGTTTGGCTG TCCAGCAGCC GATCTCTCT CCAGTCTGCC CCAGCCTCTC  
GACGTTTACA TGCTCTCTT CTCTCTCTT CTGCCATGCT GTTCTGCCCT TCATCTGCCCT GTCTCTCTCT GGAGCCTGGA  
ATTTGGGGTT TATATGGTAC ACAATAAGGG GCATGGCAGG CCAAAAGGGA ACTTTTTAGG TGCAAAAAAC AGGAATGCC  
CTTCTCACTT AGGGCTATAG ATTTTCAGGC TGAAGGTGG GGCCTTTACC AGCGAACCTG TATTTCCCTG TCTCTGTGC  
ATATCAATGT AATCAAATAC TGGGCTGATC CAGGATGTTT CTTTAGACCA ATTATGGGTA AAATAATTTA CATTGAGGTT  
TTTATATTG CTTTGTGCTT TTTTCTTAA GCAATCATGT AAAATATCTA TACGACAGTA ATAGATGATA GCGAACCTAA  
TTAAATTTAC CAGAACTTA AGAATCTCTA ATGATTTCAA CTGTAACATA GGTATTCTT CTATTGTG AACAATGTTG  
GGAGATAAGA CACAAGAGTT TCTGAAGTAT TTCAGAAACA CAAAGAGGGA GGTATATATA ATAATATTT TTTCTACTT  
TGGGAAAAATG AAAGCTAGTC ACAAAGTTAA ACGAGTGGTT ATTTTAATAT TTAATAATACA GGCTTGGATG TATTTCTGT  
TAAAGAAAAA AAAATGCAGA ATATTCAAAC CGTCTGACCA CCCTTCTAAG AAAATGCATC TCTGAGGTAT TTTCTCTAG  
AAGTTATTGT AAAAATCCTG GAGAAGCTTG AACACAGAGG AGCAAAAGG ATGCAGAGTT TAATCTGTG AAGATGTAGG  
GAAGAAAAAGC AAATCATTAA AAATAGGTCT TCCTCTGAAG ATTTTAAAAA CGCAAAGAGG GTGGAATAGC AATGATAATA  
AAAAAGCTCG CATAGAGAGT GGCACAATT GCTGTGCCAC TGAGCTGACT GGATGTGTT TGAATTTCTA GGCATTAGTG  
TACCTTTCCA CAGCATTCT CCCTTAAAA AAAATGCCCA CACACTGAAT ACTTTTTTCA TGCAATTTAA AATAAGCGCA  
CCATCTAGTT TACAGAAATT CACTAGAAGT TATTTATCT AAAATAGCAG AGATCTAGAA GAATTTTGG CTCTAGGACA  
TTTTAGACAC ACAGAAAGAA GAATCTGGAC AAGTCTTGAC CAGACATGAC AGAATAGAAA TTTCTTTTCC TATTTATCTC  
TTTGAATAAA ATTTTCAGGA TCTTACAGTG GACAAAGTTT TATCTACAC ATTGTGAAGC ACATTGATT CTCTCTGTA  
GCCTTAGGAA GATCTGAGG GTGACTGAGC TGATTGAATG ATCCGTGACC GCTCTACTGG GACCAGTAGT AGAATTTAC  
TGGTGGAGAC CTGCTGGAGG TTTGAGAGCA GACTTTGAAA ATTACTAGAG CTACACAGAT ACTGTGTGCT TAACCTGATT  
ATGTTTAGAG GCTTTCAGAA CTATGCTGCT GCTGCTGACG TGTAGCCAGG ACGCACAGAG AACATCTAAG GCTCTTGAAT  
GGGGCGATAG GGACAGATT CAGCAGCCAT CTGACTTCAG TGCTCATTTT GATGCTTCC CTGAGGGTG CAGTGTGCAG  
TGTGCACTGT GCAGTGGTGG GAGGCTCACA CAGGAATACT TGCTCTGTA GCCCTAATT CCGGTTCAAA CTCTGCATTC  
ACCTTGACAG ATCTTTTCT TGGCCAAAAT TTAGTTAGG TCTGGGCTT TCTCTATG CCACTGACG ACTTTTGGT  
AAAATCCAGT TTAGTAAAG AGCTCTGCTA AGTCAGTTTA GCAAGAATCC CCACCTCAA AGTCACTATC TCCCTCCCTG  
GTAGTGTCTG GCTGTCTTC AGCGAGAATT CTATTAGGT CTGTTAGATT AGAATCCTCC TTACCCTTGA TGCTCTCTCT  
TAGTATTTT TCATCCACTG ACTCCTTGAC CCACCTTGCT CCTCGGCTAT AAATCCAC TGCCCATAT TCTGAGTTA  
AGCATTTTT TCCCCACTA CTGCAAAATC CCATTGCCAT GTCCTCTATA CTATCTCAAT GGTAAATGA AAAGTCTGCC  
TTACCATGCT TTAACAAGTA ACATTGAACC ATTTTCTTCT TTAACAATCT GCTGCACAAT GAGATTACTA AAACCTTATT  
CCATTTTGGC ATGCTGGATG TCTCAATGG AATGGCTCT GTGAGCACA AATCATTGTG AGAAGGAAAA CCCATCTCT  
ACAGCCCCCT GTAACGTGAT GTATGTTACA TGTGATGAT GTTACATAGT TTTTTCAT GTTGATCACT TTTGCCCCAT  
TTTCTATAT CTATCAGTT GGAAGACTGT GGAAGTTTG AGTACTAAG CACAAGATGA CTAAGAAGAG TTGAAAGGGC  
AAGTGGGGCT AAAACAGAT TTTGTTGAC TTACCCACC ATTTCCCTA TCATGGGGCT GAATCTGCT GGAGGAAGGA  
GCATCTTAT CTITGTACTG TGAACCACAC AGTCTAGCAG CAGCACAGCC AAGGCACTTG GGGTTTCATG AGACTAAGTA  
CATGCAATTC TATTGTAAAG GCTTAAAAA TATACAACCTG ACCCTTGAAC AACATGAATT TGAATTGCAT GGTCAGTTAT  
ACGCAGATTT TCTTCCACT CTGCCACCC TGTAGACATA AGATCAATCA ATCTCTTCC TCTACTCTCT CAGTCTACTC  
AAAGATACTT GAAGTCTACT TGAAGATGAC AAGCACAAAG ACATTATTGA TGATCCACTT CCATGTAGT AATAGTAAT  
ATGTTTCTC TTCTCTCTAA TTTTAAACA CTCTCTCTC TCTAGCTTAA TTTATTGTTA AGAATACAAT CTATAATACA  
TATGACATAC AAAATATGTC TTAGTTGACT GTTTATGTTA TCTGTAAGGC TTCAGGTCAA GAGTATGCTA TTAGTGGTTA  
AGTTTTCGAG GAGTCAAAAG GTGTATGTG ACTTTCACT CCAGGGGGGT GGGCACCCCT GCCCCATGT TGTTCAGGG  
TCAACTTTAC TGCCAAAGGC AAGCCTTTAC ATCCACTTTT TCCATCCCAT CAGTAAATGG AAAAAGATAG CTACAGTATC  
CCTGCGTCAA ATCTTTTTT TTGCAGATCA CAAATTGGCC ACTCACCTTG CTCTGTGAGG GGTAAATGC CCCATTTCT  
TTAGTAATAT TTAAGTTAGA TAATATTTAA GTTATAAAGT TGTTCTTGT AATCGTTAAT TGTAAATTTT ACATAGTTT  
TTTCAACAG AAATAGCATT TTTGTTAGT AACCTCCCT ATAGATGATG AAACCTCTT TAAGGGCTAT CTGAATTTTA  
ATTCTTGAA AAGGCAGAAA TTGGATAGCT AGTAGTCTA AATGTACTGT GGCTTCCCT AACCTCTG GCTATATAGA  
AGCTGCATCC TTGGACTGCA GTAGAGGAGT CTTACAAAGC ACAGAGCAAC TTCTCTCTG GTTGGCTG TTTATGATG  
CAATTTTAAA TGTGTACTTT TACCCAAAGA AAATCTTAT TATCAACAAT CACAATGCCA TCATAACCAT GGTATAAAAA  
ATTCAAAATG TCCAGCTGA AGTGGAGGCA AAGACTCAAG TTCATGAGT CAGAGTTTCC TTGCTATTCC TCTTTTCAA  
ATGACCATT AGTAAGCACC TGAAGAAAAT ACTATGGACG GCATTGAAAA GTGAAGATAG GTTAAATCT CTCGAAAATC  
TAATCTCCA GATGAAACGC TGACACTTAT CCACCCACA GACCCTATAG CAGATGTGTC ACTGGCCATC ACATTGACA



CAGAGAAGTC ATAACCTCAGT CAGCACAGAG ACATTTCCAT GAGTTTCTGA ACCATGGACA GAACGTCGTC TGTGGGACAT  
GAAAACCTGGA ACTTAGAGGA CAGGCACATC TGAGAAATGG GCAGTTTAAA GGCAGAACAT AGCACATATG TGAAGTGGTT  
TTAGAAGCAA ATTTACAAGA CGCACTCTTC TTCATCTAA ATAATCTGCA ACCAAAGCTT CCAAAAAAGA CAATTTAGGA  
ATGCAGAGGT GAGGAGTAGG GAGGGGAATG GGATGAGAGA GAGGTGAGAT TAATGGTGGG CAGCGAGG TGTGATGACT  
AGTGGTTTCT TCAGGTTCTG AACTGAAATT TGTATACTGT AAAGGCACAA ACACCATTTT TAACAAAAGT GAGCAGGACT  
TCCTATCTGG TTCAGAAAAT AGGTGAATAA ATAGTACGAA TTATTAATAA TAATAATTTT CACTTATACA TAGGAAACTT  
GATAGGAACC ATGATAAATG CTTAACTCTT AATCTTCAAG GAACCTGCTT AGGGATATAA TATTATAAAT CTGTGTTTGC  
AGATGGAGAA ATTGAATTTT AACCCAAGTT ATCATAACCC TTAATGATT AAATGATACT GTTACATGAG AAAGCTGCGT  
ATCTGTTTCC TGGATTGTGA GCCATAATTT GTGTCTCAAG TCCCTTTTGC TGCCAGCTAT CTTGGGTAGG TGTGTTCCCT  
TTGGGCTGTT TGATACCCCT ACATTTATCT TTTTTTTTT TCTTTTTTGT TTGAGAGAGT CTTTCCCTGT TGCCTAGGCT  
GGAGGGCAAT GGCGCGATCT CGGCTCACTG CAACCTCCGC CTCTGGGTT CAAGTGCTTC TCACGATTCT CTGTGCCCAG  
CCTCTCTAAT AGCTCGGATT ACTGGCATGC AACCCACGC CCACCTAATT TTGTATTTT AGTAGACAAG GGGTTTCTCC  
ATGTTGGTCA GGGTGGTCTC AAACCTCTGA CCTCAGGTGA TGTGCTGCTC TTGGCCTCCC AAAGTGCTGG GATTACAGGT  
GTGAGCCACC ATGCTGGGCC CCAAATTTAT CTTAATGACC CCAAATTATC TAGTTCCCAT GACTGGGCTT CTGCTTTGAT  
CCTTTCTGCA CTGTGTTGAC CCTCTCCCTG GGAAATGAGA TTGTGCTCTG AGCCCTAGT TAGAGGCTAT GTCTCTGCTG  
TTCTGTAATG GGCCTCTGG ATGAGACCTC ATTAAGATG TAATTTCTT GGAGAATTGA GAGATACCTA TTTGTCTCAA  
AATCATTGAA ACCAATTAAT GTATTATGAG CTTCTATCCA GTGATTGTGA CCTCAATTC CCAATCCAGC GATTACAGGT  
AATTTGTTCT ACCTTACCTA GTAGGTAAGT CTGGAATTGT AGCTGTGGCA TTTTCAGTAA TGGTACTCTA GGTTAGCAGT  
CCCCAACCTT TTTGGCACC GGGACCAGT TTGTGGAAGA CAATTTTCTC ATGAAGGGCT GGGCAGGGGA GTGGTTTCAG  
GATGAACTG TTCCACCTCA GATCATCAGG CATTAGATT TCACAAGGAG TGCAGCAAGT AGATCCCTCA CACATGCAGT  
TCACAATAGG GTGTGCACT CCATGAGAAT CTAACACCGC CTAGCTCTG ACAGGAGACA GAGCTCAGC AGTAATCTC  
ATTTGCCTAC CGCTCACCTC CTGCCGTGCA GCTCAGTTCC TAACAGGCCA CGGACCAGTA CTGGTCCAGC GCGCAGGCAT  
CAGGGACCCC TGTGCTAGG TATAAGCATC TGGCTGCTGC ATGCTCTCTG TGTAGCTACA TCTGTATGTG TATCTGATGA  
GATATAAAT ATTTGATTAT AAATTACTTT CTTCAATTA GAGTTGTGAA TGAGTATCAC ATATAATTAT ACATAAATA  
GGAATATGCT TTTAATAAT GTATATAAGT AAGTTTCTT AACTGACTT TCAATCTAG CGTAGTAAG GGGTGTAAAG  
AAATATTTGT GATGAAAATA GGCATTGGTA GAGTTGAGAC CACTGGGTGA TGAAAGAGTG TAAAGATTIT AAAGCCTTCA  
GATGCTGGTT CAAGGTGAGA AATGTGATTG GGAGCAAATC AATTAACCTC TTGAAGTCTT ATAGGGCAGT TATGAATACT  
TAATGTTAAG ATATGTAAG CTCTCTGCTC CTGTATACAG TAAATGCTAG TTAGCTATTA TGATCACTAC TAAATGGGG  
ATGACATAAA CCTCATAAGG TTTAAGTAT TATGCAAGT ACTATACAA GTCCAGTAA TATCAGATT AATTGAATCC  
ATGATGTCCG ATTATTTAG CTACTCCAA GAGAGAAAAA AATGCTGTCA GTTTTACTGT TCTTATAGG AGCAAGCAG  
ATCCCAATTC CCAATGTGGT AACGTGAAAA TTTTGCATT TGAATCAACA AAACACTTTC TCCTTTCTT CTTACTATTT  
AACAACCTGT AAGTCTATAC TCCCCAAAT CTGGAATTCT CTTTCTTAT TCTTTTCTT CTTACCAAGA CCGCAGGATC  
TTTATCTGG CTAAAGGGG TAAACCTCAA GTAGTACAAG TTCTCTGTAT TACTTTTATA CTCTGTCA GATTCCCTTT  
GTTTCTCAT CTCCATGTGA ATTTAGTTAA ATTCTACGA TTCTGACTT TACTATACAA GGTAAATGAA TATAAAAAA  
AAACGAAACA AAAACCTCTT CTTATTTACA TAAGGCCCA ACCTAATATT TAGTGATATA TATTAATGTG AACAAGGAAC  
TAACGAAGAC TGGGAAGAAA TTCACAGACT TGAGAGAAGA AATGGCAGGA TTCTCTGGGA ACAATTTTAT GTAACGTCAA  
AGGTGGTAAA AGGTCAATA GAATGAAGAT GGAGAATACC GGATTTTCTT ACAAATGAT TTCCAGGAG ATCTCATCAA  
ATGCACGAGG ATACCTTCTC AGTTTCACT AGTGAGTAAA AGACTGGTAA CATAGCTAC TTACAATTTG CAAATCCAAA  
ACTAAACAAA CAACATCAA ATTTACAGAA AAATAATAGC AAAACAGAAA TCAACACTC AAATTTTGG TCCTTCTGTT  
TATTTCAATT TGGTACTCTA GTGAATGTGA ATTAACCAGG AAATTAATAA GTTATTTCAA TTATGAACCT CTTCAATCCT  
TCATCAATTA TTTGAGTAT TCTGGTCTTA AAAACATCTC TTTTCTTAC AAATTTCTGA AAGAGATGAA CACCTCCACC  
TACACAAAAA TATGTGCTT TGTGGCCAA AAGTACAGCT CTTTCTTAT TTAACAGTCT AAGGAAAGT TGGTGCAAT  
TACTATAATA ATCTGGGTTG TAAATGGTTT CTGAGGTGAG AATGAGATCA TATTTTACAA AAAGTTTTC ACTACTAGT  
ACAAGCTTAC AAAACTCAGA CCACTACCA GAAAAAATC GGCATTTATA TAGTTGTGTT ACTTTGGTT TCCTGCATCT  
TTTACATCT GGTCTATTA CATCATTTT TTTCTTCTT AAAGTGGAGT TAGCTACTAC ATTAGGTAAG GTTACTTCAT  
CAATCAACAT ACTGTTATA TCTTGAAAGT GAATTTCTT GGACCTTCCC TTGAATGCA TTATACCTAG TAAACCTGAT  
CCACAACCA GATCCAAGAC TTTTTCCTA GCAAATTTCA CTTTGGCTT TGTGAAATAA GCCAGGAGT CAAAGGTACA  
TTCCAGATT TTTAAGCCTC CCTCATAAAC ACCTGTAATC AGATCAGAGT GAGAAGAAAA GCTTTTGA ACTATGTTT  
CTCCAGGGAA GTTCTCTTC AACAAGATGG TTTTCACTAG TGATACTTA ACATGCTGGA AACCTGGTAA TGTTCATG  
ACTTTATTT CTAACATCT CTTTAAATCT TTAGGCATAG CATGCTCTT GGCAGCTCTC AAGGAGGGCT GTTTTCCATG  
TGGCTCCAAG TTCCTGAACT TGCTGGCTGC ACTGATGGA CTGTCTGTGT CTTGAGAGGG AGTGCAATT TCCATTGACT  
TATGTTCCCA CAAGTGATCC TGAGGCAAGT CAAATGTTC TGCAGAACAT TTTCTGTCCC TCTTCTCTC TTTTGTACTT  
TCTGAGACTG ACAGCTCTT TGAGGAATCC AGGGTCAAAG CTCCATCTCT AATGGGTGTT AATTCATTT CCAGATGGTC  
TTCTATAGT GAATTAACCT GAAAGGTCACT CCTCTTATTA AATGCACACA ATCTTAAAT TCAGATCTCT CAACCTCTG  
ATAGAATTTG ATGATACACA CAAATCTGCC TCAATTTATC AATGATTTT GTTGGGCCA ATTTCTCTT AGCAGCTTAT  
ACATGGTAAC AAATATTTAG AGATATTTCC AAATGACTTT TTAGACGTCT TTGGTCTCT TTCCAAGCAG CTCTGGAAG  
AAAAAAAAA AAAAAAGAAA GAAATGATG ATTAAGCAA AATGGCAGAT TCACTAAAG TGTAATATTA AACAGCCACC  
CCCACCCCTC CTGTCCCTC CACACAGCTG CTTTCTTAA AAAAGTTGTG GGAAGAGAG AGAGATAAGA GATTGGACA  
CTCATAACA CTTAAGGGT TCCAAAGTGG GAGAAGAAAA TCACTATAA AAACAACAG AAGAACAACA GCAACCAACA  
CCACTACCAC CTGGACAAAC ATAAAGTCCA AGATATTCAG ACAGGACAGC CTAGCTACTT GCTGTCTTTC AGCTGTCTTG  
ATTTGTGTC AACCATATT ACCCCCTAAG CTTCCAGAAT AACTTCACTT CTGTCTTTTA CAGAAGAGGT GCAGTATTTT  
ATTTGGTAA GTCAGCGTCC CTTTAAAAAC ATGCATAGGT ATGGCTGGT GTGTGTAAT TCATCCAAGA CTTCACTCTA  
AACATTAGT GCAGAACAGC AGCCCTAAGT GTATAGAAAGT GGGGCTAAT TGGCAATAAT TAGTAAAGAC TAATTCGGT  
GCAGAGCAAA CGAAACTAG GGCAGTGCAG TAGTTTGGAG AGACCTGTAG AAATAAGAA CAACTTTATT GAGAACTCTC  
TATCTACTGC GCTAGACACT ATACCATCTG CCTCAATTT CACAGTTCTG GCAAGTGGGA TCTTTGTTC CTTTATACAA  
GATTACAAT TTGGGGGAGA GCGGGGTAC CCAGTCCCGC GGCTAGGAAC GCGCTCTTT CTTCTCCAT CACGCTGCAA  
GGCTTGGAG TTTTCCGGC TGCAGTCCC GGAACAAATC CGACCCAGA AGTGGGGACT TCTGGCCCTC ACCTCCCAT  
TTGAATGTAA TGTTTACAGT GATCCAGACC TGGGGATGCT TGCTTCCGA CGTGTCTGG GATCGGCTT CTGAAAAGC  
TCACCTACA ACGCTCTCTC CGGACCTAAA TCGCGACCA GTGAGTCGAG TCCTCCAGGG GCTAGAGAAG CCCGACTTTC  
TTTCCGGCT TGAGGGACCC GGGCTACCA AGAAACCAAG CGCCCTCTC TCTATGGTTT TGGAGCCGGC GGAGAGCGCG  
CAAGGGTTG GGGGAGTGG AGTTTCCGGT CTGGGCTTTG CGGGGTCTGG TTTGAAGCTC TCCTGTTTGA CGAAAGTATG  
TCTCAGGAAG GTGGGCTCCC AGTAGCGCG GTTCCCTGG AAGAATTAAG TAGCTGGCA GAGGAGCTAT CCGCCGGGA  
ACTGCCGTCC GTCCTGCCCC GACTCTCAT ATCTTCTT GGTGTCACT TCTACCTAGA GAAGGGGTG GCGGGGTGCG  
GAACCTTTCT CTTCTGTCCC TTCAGACCA CCGCAGGCT GGGTTATATT ACCGCGCTT GAACCCCTC TTTTCTTGT  
CAGTGAGTG GATGAAAAGT GAGGGACTGG AGGGGAAGCG ACAACCGTGG TAGATTAAAG TAAGGCTTTG GCCCTGAAA  
GCCTCGCGGA CGTGTCTGA CCCAAGGTTT TAGCAGTGGA TGTGGCGTTT TCTTCAATC CTTCTTTCAG TTTTCTGTA



CTCGTTGCTT GCAATTAAGT GTAAATACTT TTGCTAGTGG ATAATGGGGG AGGCAAGGAC TGAGACCTGC GGTATGACGA  
TAGCTCTGGC TCTTAATAGT TTGAGGTAAG GCGAGATACT CTGAGCTTTT GTCTCCCGTA AAAAGGGTGG TGAATATGAA  
TAAGGGCTTT CTGAGCGTTA TAAGAATTAA AGGCGCATAGT TCTGTGGTGT GAAATCTTTA AAAGATGTTT AGTAAATAAA  
AATGATTTTC TCCTTCCCC TCTCAGACCT CTTTCTCTT TTTCTTTCT TTTTGTGAC AAGTTCTCAC TCCTCTCACC  
CAGGCTGGAG TCTTCTGAA AGAGTTCTTC CGCTTGTGT TGGCTTTCAA CTGTTGGATT TGAGCGCTCT TCAAGGAGTT  
TCGTCCGGGT GCAGCACATT CTTGATTGGT CTCATGCCCT TGTGGTTGTA AATGTGCCCT GAATCCTAGC CTTTCATGGT  
AAACCATATG TATATGTATC TTTTTCACAA CATTGAGCC CAGCTTTATA CAATTACACT CAAAAGAAAA AAAGTAACCT  
TCACITGAGA GAATCTCAAT ACTGCACAA TATTGTGCG CTAAGGCCCT ATGTAATCAC ATAGAAGTCA TTCACCTAGG  
CATTAGCAAA ATCTCAGAAG GTGCCAAAGC CCCCTTTTTT AGTCTTTTGT TAGGTACAGA ACTGCCGTCT TCAAGGAGTT  
TCAACTTGAA AACAAATAGC CACCCTCAAA ACATTCAAAA ACCTTAAAC TGGGTGCATA ATGTGTGTGA GACATGGTGT  
TAGGCTTTGG GAGAACAGAG ACACGGAACG TGATTCTCT TCTTCCCCAC AAGCTTATAG AGAGACTTCA TTAAGTTGAA  
AGTCAACATT CCCACCTAGC TTTGCACCTC AAACGACATA TTTCAAAAAA CCAAACTTC CTCTAGTTTT CTTTCTCTGA  
GTAAATGGTT TCACAAACTG AAACCTTGAA TCCTCTCTGT CTCACACACC CGATCAGTAA GTTCTATTGT TCTGATTCC  
AAACTATGTC TTGAATCAAT CCGTTTATCT CCATCCTCAT TGCTACCACT CTGATTCCAA ACCCTTATCA CTTCTCACTT  
GGAGTATTA TAGTTTCTT GTTCTACTC ATAATTCATT ATTCCAAAAA AGTTAAGAGG GGAAGAACAT AGATCTCGTC  
ATTTCCTTT TTAACCACT TTACCTTCAA GGTTCAGGT GATCTAAGCC TTGCCCTTCT CTCATACCTA GTTAATTAAC  
TACACTCTGT TCATGAATAC ATTAGGCTCA CCTACTCAA AGTCTTTTGT CTCAGCCTGA TTTGTCTCT CAGCCTTTTG  
CATATTTCT GTTTATGTCT TGGCCCAAT GTCATCTCT TAGAGGGGCT TTTTCAGAGC CTTCAATCTT AGGCAGTTCC  
CCCAAACGCA GTCTTACACT TGTATCACAT TGGCCTGTT AGTTTTCTAA AAAGCACATT ACCATTAAAA GAAATGCTCT  
TGTTTGTCT GTATTTTTC CACTTCTACA CATTATGTTG CAAAGTTTAT AAAGGCAGGA TGTGTATTTT CTTTACAGCG  
TTACCTCAG CACCTAGAAG AGTGCTGAC ACATAGTAAG CATTCTAA AGGGCTAAAA ATATTCTATG TTTTAAAAAT  
ACTTGGGAGT CTAATTAGAC AATACTTTTT TTCAGCTTAA TGGTAGTATT TTAGCTTAC TATTTTAACA AATGAAAT  
TTGCAATAAA TCTACAATGC CATTACCCCC CAAAATCTTT TTCATGTTTT GCATTTTACG TATTATTTTC CAGGCCTTAC  
CTGCATGCT GCATAATCAT AACTGACTAA TTTTGAACA GCTGGTAATT ATTTGAGCTT TACTGAAAT TTTTCATGAG  
GCCAATTTCTA CCTACTGAA CTCAAATTTG AGTTAATGAT GACCTCATT TGATTGCTG TGTAATAAAT AAGATTTCCG  
AAGAGGAATG AATTCTTGTA TTAAGTGGT AGGACTATGG GTTTTTTTTT GTTTGTTTGT TGTGTTTGTAG ACGGAGTCTC  
ACCCTGTAC CCAGGCTGGA GTGCAGTGGT GCGATCTCAG CTCACAGCAG CCAGGTTCAG GTGATTCTCC TTCTCAGCC  
TCCGAGTAG CTGAGATTAC AGGCACGTGC CACCATGCCG GGCTAATTTT TTGTATCTTT AGTAGAGATG GTTTCACCAT  
GTTTGGCAGG CTGGTTCGA ACTCTGAG TCGTGATCCG CCTGCCCTCAG CCTCCCAAAG TGCTGGGACT ACAGGCGTGA  
GCCACCGTGC CCGGCCGGGT TATTCAATTT TCTTATTAAC ATTTCTTATG GATTCTTATG GTGTTGTATC AGTAAACAT  
TTCTAACAAT TATTCTAACA ATTATTCTG ATGGTGATA TGAAGAATTT ATTGTGCTGT ATTTGTAAGC TGCTATGTGC  
AGAAGAATTT CAGTCAATA AAGTTGGTAA GATAGGTATG TAAGTAATAT GAAAAAAGAT AGAAGGTGAT GAGTGACTTA  
GGTATAAAT AAGTACAATA GAAATGTTGA GGAAGAAAAA ATTTCTTGTA ATAGAAATCG GAAGTACAAA CTGGGCAATG  
TGGTGTGCAT CTCTAATCCC AGCTCCTTGA GAGCTGGTA TGGGAGGATC ACTTAGCCCT GGCTCGCAGT  
AGGTGTGATC ATGTACCCGC ACTCCATCCT GGGTGACAGC AAGACCGTCT CTCTTTTTTT TTTTTTTTGA GACGGAGTCT  
CGCCTATGCT GGAGTGCAAT GCGCGATCT TGGTCACTG CAACCTCTGC CTCCAGTTT CAAGTGATTC TCCTGCCTCA  
GCCTCTGAG CAGCTGGGAT TACAGGTGCT CGCCACCATG CCAAGCTAAT TATTTTGTAT TTTAAGTAGA GACGGGTTCT  
CACCATACTG GCCAGGCTGG TCTTCAACTC GTTCCCTCTT GTTCGCCAT CTAGGTCTCC CAAAGTGCTG GGATTACAGG  
TGTGAGCCAC CCCACTTGGC CCGGAGCGAG ACCCTCTCTC TAAAAAATA TAAATAAATA AATCATAAAT CTGTGGATTA  
TTGTAGCAT GTTCTCTATC TGTCAAAAAAT ATTTATGATC TATGATATG TTGAAAAGGC AAGTTTGTCC CTGGGCAAT  
TTCAAAATAT TCTTTAATG TGTTTTACA ATACTGTTA CTAATAAAT CTAAAGTTT TAAAGCAAA ATTAAGCCAG  
TAATTTGAGT CCAATTCCAA TCTCTTATGA GTCAITGCTT CTAATTAACA AGGGTTTAT TTTTTTTTGA GGTTTGTCT  
GAGTAATGAA TACCCTATTA CTATGATACT AGTATCTTCC TTAATTATCC TACTCATTGT CTCACATTC TGACAGTTGG  
ATTGAGCATA TTGTAAGTA AAATTGTTTT AACTGTATGA TGTACTTTGA TGTAAGGTC CGAGTCCCCA CATACCTCGG  
TAGATGTGT TTACAGTTT TGTATTCCT TGAATGTAA TGTATCTCTA TGTTACAGCC TTTATAACCT TCAGTTACTT  
GAAATGAACA AATTCAATTCA AATTCCAGCA CTTAAAGAT TTAATTAACA TTTTGATAA ATACCAAGT GTTTTGTGA  
TGATGTATGT ATAAACAAAT TGTAATATT AAACGTTAGT TGTTACGATT AGACCTATAT AAAACATGAT ATGCAGTCTA  
CTGAATAGCT ATCAGCCTCT AACATGTTA GTGTCAATTA GAAATGCTT TCTAAATTGC CAAAAGCTGA TTGTCTAGGT  
GATAACAAAT TTACCATTTG GAGGAAGTTG ACTTCTCAT TTTCTATGCT TCATCAGTCT TACTTGATGA GATTCACTCT  
TCTAGTCAGA AGAGAGTTTA GACTGCTCAG TTTACTCATA TTTTGAATGA GCTTTCTAT TTAGAGTTCA CTTGGTTGTG  
GAATATTCAT TTATAATTG AATCTACGTT GTGTAATGGG ACCTAATTTT TTTTCTCTT GTTTTGTGTT GAGTCTCGTT  
TTGTACCCA GGTGGAGTG CAGTGGCGTG ATCTTGCTC ACTGCAACCT CCACCTTCCA GGTTCAGGTG ATTCTCTGCT  
CTCAGTCTCC CAAGTAGCTG GGATTACAGG CATGCTTAC CACGCTGGC TAATTTTTGT ATTTTATGTA GAGATGGGGT  
TTCACTATG TGGCCAGGCT GGTCTCAAAA CTCTGAGCT CAAGTAGTCC TCCTGCCTG GCCTCCATAA GTGCTGGGAT  
TACAGGCGTG AGCCGCTGAG CCTGGCCCCA GAGTTTGT TGTTTTGT TCAAGACAAG ATCTCACTCT ATTGCCAGG  
CTGGAGAGCA GTAGTGGAT CATAGCTCAC TGCAGCTGA ACTCTGGGT TCAAGCTATT CTCCTGCCTC CATCTTCTAA  
AGTGCTGTGA TTACAGGTCT GAGCCATGAT GCTTGGCCTG TGTTTTGT TGTGTTTGT GGGGACAGG GTCTTGCTTT  
GTCACCAAAA CTGGAGTGTA GTGGTGCGAA CATAGCTAGC TCACTGCAGC CTCCATCTCC CACGCTCAAG CAATCCTCTC  
ACCTCAGCCT TCCAAGTAGC TGAGACCGCA GTGGCGTGT ACCATGCGTG GCTAATTTT TATTATATA TTTATTTTTT  
GGTAGACATG AGGTCTTGT ATGTTTCCCA GGTGGTCTT AACTCTGGG CTCAGACAGT CCTCCCGCT CAGCCACCA  
AAGTGTGGG ATTACAGGCG TGAGCCACCA TGCGTGGCAT AATTTTTTTT AAGTAAATTA TTTTTTATC TTGAGTATAG  
AAGTGAATCA GTTTCATTGT GGAATAATG AAACATATAG AAAAAAGAA AAGATTACAA AACATCTAAT CTGAAATGGT  
TAAGATTTTG ATGAGAACAG TCTCATCTCA TTCCGTATA TTTCCGCGAG CCTATCCATC ATTTCTGTA CATGTTATC  
TACATTAATA TTGGTGTAT ATTTTGGAAA CTTTTGTTT AACTACATTG TGAACATTTT TCATGTTTTA AAATGTCATT  
TTAATGATGG CAGATCCTAT TCAATAGATG TACACACACC TATTTAACCT GTCCACAATT GTTGGATATG TAGGTCGTTT  
CCTTCTCTC TTTTTTTT TTTTGGCTA CTACTAATA GTTCTCTGT ATAGAATGTG GTATTTTGA AGTGATCAA  
GCTTTAGATT GGTAGTATC TTGCATTTAA TAAAGGCGAG TGGCCTTTGT TGACTGACAT GACAATTTT TTATAAAT  
TGTATTGTC TTTACAGAAA TTTTGAATA TATTGTAGAA ATGTTTTTAC CTCATATGAA CCACCTGACA TTGGAACAGA  
CTTCTTTT ACAAGTGTTA CCAAGGATAT AATACTATTA CTGAAAAATA CATGTTATAA GGAATCTAGC CTCAGTCTTA  
GATGATTTAT TATTAATTAT GGCTCTCTT TTCTAATATA TCAATATAT TCAAAATAA AATAAGGAGT AAGTAGATCT  
CATGTAGAC TATAATGGT TTAGTGTGAT CATTAGCGAG TAAAAACTG TTACAGGCTG GGCACGGTGG CTCATGCTG  
TAATCCCAGC TCTCTGAGAG GCTGAGGTGG GCAGATCATC TGAGGTCAGG AGTTCGAGC CACCATGATG CAACATGATG  
AAACCTCGTC TCTACTAAA GTACAAAAA TTAGCTGGAC ATGGTGGCAG GTGCCTGTAA TCCAGCTAC TTGGGAGACT  
GAGACAGGAG AATTGCTTGA GCCTGGGAGG CGGAGGTGCT ATTAGTCAA GATCGTGCCA TTGCACTCCA GCCTGGGCAA  
TAAGAGCGAT GCTCCGCTC AAAAAAATA AAAAAAATA AAGAACTTAT ATTTTCTAGT TGTGTGGTTC CTTTACTAAC  
TGAATTTAAA TTATTGTAG TCAATTTTAA ATGCTCTGT ATTTTAAAGC CACTGTACTC CAGCCTGGGT GACAGAGTGA

AACCCCTTAAT TCAAAAAAAAAA AAAAAAAAAA AAGAAAAGCT GGAATATTGG CAAAATCAAG TAACTAAGAG AAAACATTAA  
ATTCACAGAA TACATTATTA CATTTTAGAT ATATATGGTA TATGTTTTCT CTGAAAAGCA CAAGCATACC TTTTGTGTTT  
TAAATGGAGG GAACTAAAGA TACTTTGGTG CCAAAATGAA ACATTATTGG TAATTAATCT CTTATTGAAA TGGGTTTCTA  
ACTTTAGCTT TGAATCGTAA TCTTTCAAA TCTTTGTACT CATAGTCACT TGATGATTCT CTATCTGAAA TATTTCTTAG  
AATTTGTTCT TGACCACAG AAAAAAGATT AACTGTTACA TAGATGAAAA TGGATGTTGA GTGTTAAGAG GCCTTAGGGA  
AACAGTATTT TCTTTAGCTA CATTGTATTG TTGACTGTGT TGCTATTCTT ATAATGTTTA GGTCAATTAA ATTGTTAGAA  
AGATCCAAGT ATTAAGATCT AGGGTGGCTA ACTTTTCACA GACAAAAAGC TTGTTTGTA GGTCAATTAC TATACCCTTA  
ATTCAGGAAG GTTAGCTTGA ATTGGGTCAA AAGGAAACTG GTTAGAAAAA AAGTGAGTAG TGAATAGGCG ATTCAAGTGA  
AATTCCTTCC AGAAAAATACC CTTGTAAATG ACTGTATGAA TGTGGATTCT TCAAGACAGT CAAATTTATT GTGCGAAAGT  
AATACTTTTA TTTTGTGCAT CTCTAAAACA TGAACTTTGA GTGATTTTTT AAAAAAATTG ATGCTATTAA ATAGATTCAA  
ACCATAGAAA TGGAAAATAA ATTTCTGTTT GGGGCTTTTG GGGGGATTAT GTTGTA AAAA TACCTTTTCT CTGATTTTGT  
TGCTTAATTA GGTACAATTG TTAAGCTAGA TGATAGCCTG TGGATGTTAC TAGTGCAAAA TCAAATTATC GTATTGTGTT  
TTCTCTGTAA AGTTTGTCT TGTCTTTCT AGTGATTCT CTTATTCCTG TTTATTACTT GATTGTTTTT TACAGACTGT  
GAAATTATTC GATGACATGA TGTATGAATT AACCAAGTCAA GCCAGAGGAC TGTCAAGCCA AAATTTGGAA ATCCAGACCA  
CTCTAAGGAA TATTTTACAA GTAAGTCAAA TGTATTAGAA AGCAGGAGAG AGAGGGAGCT TAAAGAAATG CAAATTTTTT  
ATACTGATAC TGATTAGTGA TGTATTCTTA TGTAAATGGC TAATGTGGA ATTAATTTA TAGAATTAAG GACGTGAATA  
TAGAAAACATG AATTCTGAAT AATAAACTCT TATAAAGAAGA GAAGTCACTGA AGCTAGCTGA CCTACTGT ATTTCAGG  
ATATGTGTGG AACACCTGCC ATGTGTTTTG AAGTTTGTGT TAGTATTCTA AATGGCTAGA CAGTTGTCC AGTATTGTGA  
GTTCTGATAG ACTAAAGTTC TGTGAAAAGA GGAAGAGACT GTGTTTTGTT CATTGCTGTA TTTGTAGCAC CCAGCATGCT  
GACTAATACC TTTTCAGTGC AAAAAAATA TATTCTAAGT GAAATTTCTT TCCTTATTCA CAGACAATGG TGCAGCTCTT  
AGGAGTCTC ACAGGATGTG TTCAGCATAT CTGTGCCACA CAGGAATCCA TCATTTTGA AAATATTGAG AGTCTCCCCT  
CCTCAGTCTC TCATATAATT AAAAGCACAT TTGTGCATTG TAAGGTGAGT AAAGGTCTAA TTATACTTTG AATGGTATAT  
AATCAATGTG CATAGGGGCT GAGTAAATA ATGTTGTAT AAGATTTTAC ATTTAGTCT ATATTATTGA AATAAACTTT  
TCCATAGAAT AAAGAACATG TAAGTAAATA ATGTTGCAA AAAAAAGTGT TTAAGGAAG TCATTAAGG TGGCTTTTGT  
GGGTTTTTTA GTTTTATCTT ATTTCCCCTC TATAAAGAAA GAAGTTTTAA GAATTTGTGT TGAGACAGAC ACAGGGATCC  
TGAAATAGTT ATGTCAATGT GCATTGACCA ATATTCAATT ACCATTATGA TTAGATGTGA GAACCTCTCT TTATAAAGGA  
AAGTTAATCC TTATTTAGTC CATCTCTACA TGCCAGAGGT AGCCTTGAGG CACAAAAGCT TGCCTAGAAT TTATGGGTCA  
CAGACAGTTT TAATATTGCT ATTTGTTGGG CGAATGAAAA TCACTAGTTA ATTAATACCT CTCTTTGCTG ATAGGATGCT  
AAAAATGTCA CGCACCTGGC CTAATGTTAC CCTTTTATG TTCTGTATT TCAAGATCAT GGAAGTCAGA AATAATATT  
TATACATGCT TGCATCTCTT GAAGCACAT ATATTAAATG GATGTTCACT AAACAATGAA TGAATATGAT ATTCAGTAAA  
TTTATGATCT CTAATAGTAT GAATTAAGT AAATTTGGCT CTTGAGCTTT GATTGTGTTT TTCTCTCATT TTTATTTATC  
CGTAATCAGA ATAGTGAATC TGTGTATTCT GGGTGTATAC ACCTAGTTTC AGACCTTCTC CAGGCTCTTT TCAAGGAGGC  
CTATTCTCTT AAAAGCAGT TAATGGAAC TGTGACATG GTTTGATGAG ACCCTTTAGT AGATGACAAT GATGATATT  
TGAATATGGT AATAGGTGAG TGAAGAAAAC TTTCTGCTTA GTATATGGTG ACTATAAATC ATGTATCAAT TAAATTTGTC  
TCTAATGATT CATGTTATTT TCTTACTAAT TATGCATTAA AATTGATTGA AATCTTACCA AATAAATTT TAATCTTGAA  
ATTTGGAATT TGTAATAATT ATTTTGGGTA CCTTAACTTA GATTGCGTA TTTAGTACT GTAATTTCTC CACAATGATT  
AACTTATATA ACTTTATAAT CTCTGAGGTT GTCCATATTC AGAGACAATA ACTTTACAT TTTTAAACC ATAACGTATA  
TTGAGATGCA GTTTATATTT CCTTCCAGAA TACATATAAA TACGTGCTA TGTGTATGTA AATATGTCTA TTCTCATATA  
CATATTATAA TGAATAAATC CATTTTACAT GTGATGCACT TTATACTAGT TTATTTTAT TTTTATTGAGA  
CAGAGTCTCA CTGTGTAGCC CAGGCTGGAG TGCAGTGGCA CAATCTCGGC TCACTGCAAC CTCGCTCCC GGAAGTCAAGC  
GATTCTCCTG CCTCAGCCTC ATGAGTAGCT GGGATTATAG GCGTCCGCCA CCACACCTGG CTAATTTTGT TATTTTATG  
AGAGACAGGG TTTACCGTG TTGGCCAGC TGGTCTTGA CTTCTGACCT CAGGTAATCC ACCTGCCTCA GCCTCCCAAA  
GTGCTGGGAT TACAGGCATG AGCCACCGTG CCCAGCCAAT ACTAGTTTAT TTTTAAAGAA TTGCTGGTGC TAACACACTT  
CATTGATTTT ATCACTCATT AATGGATTAT GAACAAGAGT TTGAAAAACA ATATAAAGGC AAAGTTTGCA TTCAAACTT  
TGGTATAAAG AGAGTAAGTT GGTTTTGTGC AGTGTATCAG GCACCTGTTG CTCTGCAACA CACCACCTCA AAATCTATTT  
ATTCATCTAT AGTTATTCA TGATTCTGTG AGTCTGCACT TTAGGGTGGG ATGCTCTGAG ACACTTTCT CTGATCCACC  
TGGGGCACTA GCTCACCAT GTGACTTCAG TGACTTCATT CACATCTGGC TGTGGCAGA GGCAGAAGTA CTTGAGAAAG  
CCATGTGCAT CATCCAGCAG GTTCACCCTA TCTCAGATAC CTGATGCCAG TGGTTTCAGG GTTTCTAAGA GTAGCAAAAG  
TGTGAGCAGG TCGCTGTGTG CTAGCACTTT TCAAGTTTCT GCTTGCCTTA ATTTATTAT TGTCCCGCG GCCACAGCAG  
GTCAATAGCGT TTAGCCGAGA GTCAATGTAG AAAAGTGTGG ATTCAAAAAG GGCAGTCATT GTGGCCATTT TTATAAATAA  
TCTACCACAG ACTGAGTAAA AGCCTTGCAT GAATACCATG GATATTAAAT TGAATTCCTT CTTTTAGAT TTCTTTCTC  
TAGCAATTTG TTTTGTCTT TTGGATTAGA ATTATATCTG TAGAATATTT CAGTTATAAT AGGGTACAAC TTTTATTCCA  
CTGAACATCT TTAGTTTAT TTAGGTATC TGGTAGGTAT AAACCTCAGA AGTTAATATT CAATATTAT AAAAACCATT  
AAAGTGTG ACCTTAAAT AGTTTAAATA ATTTCTTTGA CACAACGTG TCCAAGTTGT GTTACGTATT TTAATTTCAAT  
CAAAATTTGA AATTGTTTCA TAGATGTTT TAATTATAGG AGAACTCAC CCCCATGACA TTTGGATGTC TTAAGAGTTC  
TGTTATCTTT CTTTGCAGTT ATTCATTCTT TATTGGATAT CTGCTCTGTT ATTTCCAGTA TGGACCATGC ATTTATGCC  
AATACTTGA AGTTTATAAT TAAGTAAGTT TGTGTTGTTT TTTTACTTT TTAGAAAATG TTTTCCATAT TCCCAATCT  
TAATTATTCA TGATTCTTTA GATTGCATTT AAAACATTTT GTGTGAATTT AATGTTCACT GACACTGCTG TCTGATAATC  
CAGATATTCT ACATGTAGCT CTCAAGCCAA ATTGACTTTC TTAACCTGT GGCCTCTAAA ATTAATAAAG ATGTTCTTCC  
TAGTTAGCTA GTACTTCAGA AATAATGGGC CATGGGCCAG ACTAGAACCT AACCCTTTT CTCTGCTGCT TGTGTTTAA  
CCAGCTATCA AGTATCTCTAT TTCTAGGATT AGATAAATTG ATAACATAA TAAAACTGA ATATAATCTT TTCATTAGGT  
ACTTTTAAAT TGTTACACT TAATCCATT TGTACAGTAA TTTTAACTTT CTGAAACTGA AGCATTITAA AGGGTCAACA  
GGGATAGTGC CTGAGCAAT CATCAGATTG TTAGGGGTGA GAGGAGATGT GGTGAGATG TAAAAATGTT TAAGAATATC  
TACTTTATAC ACATACATAA AACATTAAAG GTCAGTGTAT TTTAGGTTCT TAGGTACTTT TGTGTACTA CCAGGACATT  
AAGTTGCCAT TCAGTGGTTA AGAGTGTGCT CTGGGAGCTG TATCACATGT GCTTAAATCC ATCTTGAAA TCATTTACTC  
CTCTGAGCC CTTGGGCTAT TTGGTTAATT TCTCTGAACG TTAGTTTGTCT CATCTGAAA TGGAAAATAA AATAGCAACT  
TCTTGACAGG GTTATAGTGA GAATGAGTT CATCACTGTG AAATGCTTAG AAATGTGCAT GACACATAGT TAATACCTAA  
GGAATTAGCC ACATCACTAT CATCACTACT GATTATCTTC CACTCTTACC CTCTCCAGT TCATTTCTG TCAAGTAAAG  
TGATCTTTTA AAAAGTAAAT CAGATCATGT TACTCTATTG CTTGAAGTCT ATCCCATTG ATTAAGAATA ACAACCTAAT  
CCTCTGTGGA TGCTGCTCC TFCACCAGCC TGTCTCATGC TGCTCTCCCT ACTCTTAGT CCTCAACAT ACCAACTCT  
CCTGTCCCAG AGTCTTTTCT TGGTTTTTCC ATCTGCCTAG GATGCTTCTC TCTCTATT TGTGTACCTT GCTAACTCT  
GCTTACTGTC TTTTCTCT CAGCTTAAAG GTTATATCTT CATGATAACA TCTTTGATA TCTTACCCT TCCATTAAGT  
TAGATTGATA TCTTACCCT AAGAATAAGT TAGATTAGGT CTCTCTATTG TAGCACCTTA GACTCTGTCA TTTGACAAAT  
CACAGCCCTA ATTAATTATT CTTAAATTA TTTAACATTC TCTCTCATGC TAGACCACAA GTTTCATGCA GGTAAGGCGG  
AGATTGTGTC CATTGTTTG ACCCTTTGT CTCCAGGGCC TGGTGAATG CCTCATACAT AGTAAGAAAT CAATTAATAT  
TTTACACAGA GAAAAATTA GCAACTTATT TAAACAAATA TAACTGCTTC AGAGGTAAAC TGGGCACATC TTAGTTATAT

TATGTGATAT ATGATGCTTT TTGATTGTTT TTTTAAATGT TCTACAAGGT AGATATTGTT AGAGGTCCTA AGTTACTTGA  
TGTTGTACTT GTGGTGATTG TATTCITTTT TTTTATTCA TTTAGGCAGA GCCTTAAGCA CCAGTCCATA ATAAAAAGCC  
AGTTGAAACA CAAAGATATA ATTACTAGCT TGTGTGAAGA CATTCTTTT TCCTTCCATT CTGTGTTACA GTTAGCTGAG  
CAGATGACAC AGTCAGATGC ACAGGTAAAA TTGGGTCTAA TAGCATTTTA AACAGCAACT CTATTTTTCT TTGGCAGTTA  
GTAATCTCA TTTGAATGTC TGGGTCAGTC TATTTAAGAG GATTTTAAAT TATTTTCAAT TTTTGTCTG  
TGGGATTATT TATATCCCAT AATTACTTTT CACCCAGAGC ATTGTATTAG ATTCCTAACT GCTGTCATTG CCTCTGGGGT  
CTGCCTGGCT CCCTCTTTGC TTGGTAACTG GTTGGTCACA GCATTCTTCT CAGAATCCTT TCATTCTTTT CTGCATGAGA  
ACAAAAATTC TTTTGTTCAT ATTTGTATAA GATCTGATAT AGCTGCAATC AATCTTGAT TTTTCTTCA CCAACGCATT  
GCGACCTTTA GGGATACAAG TATGTTTGTG CATGTATATG TATGTATCAG TCTTTTAAAT TGTATATAGT CATACATTTG  
TTTTTATTTT GAAAAGTTAG AGTGTGAAT TGGTATCCCA TTTATGAAAC ATTATATTCT AAAAATTTGT AGTACGATTA  
TTGGGAATTA TAACCTATTT TCCTGTAACA CTGTTATACA TAGTACCTTT TGCTTTCAGA CTAGCCCTCA ATTTTATTTA  
ACTATAGTAG TCCTAAATTA TAAGATTAAT AGTACTCAGG ACCTAACAGT TATATGTCAT TTGTTTTTTT TTTTITGAG  
ATGGCGTCTC ACTCTGTAC CCAAGCTGGA GTGCACTGGT ATGACCTTGG CTCACCTGAG CCTCTGCCCT ACGGGTCTAA  
GGGATCGTTC TGCCTTAGCC TCCTGAGTAG CTGGGATTAT AGGCGCCTGC CACCACGCCT GGCTAATTTT TTAGTAGAG  
ACGGGGTTTC GCCATGTTGG CCAGGCTGGT CTCGAACCTC TGACCTCAGG TGGTCCACCC GCCTTGGCCT CCAAAGTGC  
TGGGATTACA GGTGTAGGCC ACCGCGCCCA GCCTATATGT AATAATTTTA ATGGGACCAT GAATTGAATA TTTCTTCTT  
GAATAGCAAT GACATAGCCC CTTCATTGT ACATCTGCAA GTGTATCAG TCTGTATCAG TCTTTTAAAT TGTATATAGT CATACATTTG  
CCAGTCAGCT ATGGGGTGA AAGTGTAGGG GTTCATCCAA GTCCTAAAC TGGTAGCAAC TCCTAGGGCA GGGCTGATCT  
GGAAGGACAG ACCCTAGGGG AGGGTGAAC TTTAAAAAGA AGTTCTGAAG GTAGTAAGAA GGAATGAGG AGTAGTGTA  
GGAAGGGGCT AACTTTTTT TCTTGGCTT CTTCTTTAT CTCACCTGCC CCTCCCTTG TATCCCTTCT TCTTTTTTCC  
CTTCTTTT TGTCTCTC TTCATTCTGTC CATCTTCTT GATTCTCTT ACCTTGCTAA AAGGAGAAT TGTGTTGGGT  
ATCCTATATC AATGGCAGGA AGGTTGTTTT CTCTTTTACC TTTATCTAT AGATTCTAT TCTCAACACC AACCTCCTC  
TTTTCACTT TCCTTCTGCT TCTCTTGAC ACCACAGAGT TGCAGCTAG TACTTGAGA GGAATTAAC ACAGAGATAC  
TGGACCAAG AGTAAGATGA AGAAAGTCTA AACAACAGTA TAGTCTATAG TGGCAAGAGA GAGTATGGGG GCTGCTTAGC  
CAGGGTGGCT GTACATAAAG TATATCTCA GTTATATAA ACTGCTTATA GATGGAAATC AGAAATTTA AATTCTCTA  
ACTGTCCAAG AAAATTCTCA TTTTTTCAAA TTTGGGACTG ATAAATGTGA CCAGTTCTGC TTACTGTCCA TTGCGTGA  
TGGAGCTTGG AGGTGGACTG TATAATTTCT TCAATCTTAA CTCAAATTC TGATCAGCGA CGCCCTCTGC TGTCTACTAT  
TAATATTTAT TTACCAATCA AAGTAAAGTA TTGAAGTTTT CTGGGAGTT TCACTTTGT GTTTTAGTCC ATTTAGGCTG  
TATAACAAA ATCCCTTAAA CTGGGTAAGG GATTATAAAT ATTAGAATTT TATCTCTCAG AGTTCTGGAA GCTGGGAAGC  
CCAATATCAA GGCACCACTA GATTGTTGT CTACAGAGGG TGGCCGCTCT GCTTCAAAA TGGCCCTTG TGTCTGATC  
CTCATTAGT GCAAGGGGCA AGACAGCTCC CTCAACCTC TTTTATAAGG GCACTTATGT CATTATGAG GGCAGAGCCC  
TCATGACTTA ATCACTTCCC CAAAGGCCCC ACCTCTTAAT AGTATCACAT TGGGTGTTAG GTGTCTGGGA GGACACCAAT  
CTTCAAGCCA TATCATCTCA CTGGAAAAA AGTCAAAATA AAACCAAGTAG ATTTAATTA TATTACATA TTTATAGAAG  
CATGTGATGT ATCATTCTT GTATTAATTT CTGGGGTTG CCGTAAACAAG TTACCAACA CTAGGTGGCT TAAACCAATA  
GAATTTTATT CTCTCACATT TCTAGAGGCA GAAGTTCACA GTGTGTCAT AGGGCCATGT TCTCTGGAAG GCTTTAGGGG  
AGAATATATT TCATATCTT CTCTTAGCTT CTGGGTGTC CTGGCAATCC TTAGCTTACT TTGGCTTCT GTGTCTTAC  
ATCATCTTT TATAAGAACA CCAGTGATAG TGATTAAGGG CATACCTTAC TTTAATATGA CCTCATCTTA ACTAATTATG  
TCTTCAATAA CCTATTTC AAATAAGGCC ACATTCTGAA GTATTGGGAG TTAGAACAAG AAGCTTTTGG GGAGGACAG  
AGTTCAACCC ATAACAACCC CTAATAACGA TATTTATTCT CAATTAAGTC TTGAAATTGG TTTCAAAAAG AGAATATTCT  
ATTAGAGTTT TTAATGTATA GTTTAACAT ATAGTCTTT AGCCCAAT TTTTTTTTT TTTTTTTTT TTTTTTTTT  
TTTTTGAGAG GGAGCTCTGC TCTGTGCGCC AGGCCGGACT CGGGACTGCA GTGGCGCAAT CTCGGCTCAC TGCAAGCTCC  
GCTTCCCGGG TCTACGCCAT TCCCTGCTC CAGCCTCCG AGTAGCTGG ACTACAGCG CCTGCCACC CGCCCGCTTA  
ATTTTTTGT ATTTTAGTA GAGACGGGGT TTCACCTGT TAGCCAGGAT GGTCTCGATC TCTGACCTC ATGATCCACC  
CGCCTCGGCC TCCCAAAGTG CTGGGATTAC AGGCGTGAGC CACCGCGCCC GGCCTGCCCC CAATTATTTA GTTTTTCTAT  
AAACAGGGA ATTTATTGT GTGGCCCTTA GAATAATTT AATTCTCACT CTAATCTCTA CTATGTTTA TATAATGCTT  
TTAGAAATTT GTATTATTA GAAAATAAAC ATATTCTAT GTATCTGTTG CCTACAATA GATTTTATTG AATGGTATAT  
TTAAATTTTA TTAGTATTTT AATTGTTTT TAAAGAAAG AATGTGCTG TAATCTCAGC ACTTTTGAGA GGCCAGGCA  
GAAGGATTGC TTGAGCCAG GAGTTTGAGA CCAGACTGAG CAACACAGGG AGACCCCAT CTCTACAAA AATAAAAAA  
TTCTCCAGGC CTCATGGCAC ATACCTGTAG TTCTAGTTAC TTGGGAGACT GGGGTGGGAG GATGCATTGA GCCCAGGAGA  
TTGAGGCTGC AGTGAGCCAT GATCAGGCCA CTGTACTCCA GCTTGGACAA CAGAGTGAGA GCTGTCTAG ATAGATAGAT  
AGATAGATA TCTAAATAGA TAATAGACAG ATTATCTAAA TAGATAATAG ACAGATTATC TAAATAGATA ATAGACAGAT  
TATCTAAATA GATAATAGAC AGATTATCTA AATAGATAAT AGACAGATTA TCTAAATAGA TAATAGACAG ATTATCTATC  
TAAATAGATA ATAGATTATC TAAATAGATA ATAGATAGAT AGATTAGATA GATAGATAGA TAGATAGAGC TTGGACAACA  
GAGTGAGAGC CTGTCTAGAT AGATAGAAAC AAAGAAAGAA AGAAAGAAAT GTGCTCATAT TTTAAAGCAT TGAATAATGG  
TCTTCTTGC TTATATTACC CACACCTTCT TTGTTGGCAT TAAGATGCAA ACTTTGTTT AAACAGTTGA TAAATCAAA  
GATGGGACTG TTAAGTTATT TGTGTTATTT ACCTGCTTTT TGAAATGTA AAAATAAAC TCTAGGTTTA ATTAGTAGTA  
TGCTATTTAG TAATGAAGTA AAGCTAGAGG CTTCGAACAA ATCTTGTGTA ATTTCTCTT GAATGAGAGA GAAAATTTAA  
AGTAAGCAA CAAATAAGTT GTGTGTCACC ACTCATTCAG TCATTTAACA AGTATTCCA GAGTACTTAT TCTGTGCCAG  
GAAATGTTGT AGGTGCCCTC AACAACCTAG AGTCTAGCCT GAGACACAAG TAAGTAGGTA ATTATTATG AATGGTATGA  
TCTTTGGAGG ACTGGGTATT GGCTGGCTCA TGGGAGTACA AGTAGGTAC CCAAGTATGA AGTCAGGAAA GGTTCCTTAT  
GGTGATATGA TGACGTCTAT GCTGATTATA AGGTGAGTGT AGAATAAAT TTGTGCTTTT AAATTTGCAT AGCACTGTAT  
TAGAGAGTTT ACTTCAAAA TAATCGAAAA GGCTGAGTGT GGTGACCCAT GGCTGTAATC CCAGCACTTT GGGAGGCCGA  
GGTGGGCAGA TTGCTTGAGC TAGGAGTTTC AGACAGGCT GGCCAAACATG GTGAACCCCT GTCTCTACTA TAAATCAAA  
AATTAGCCAG GAGTGATGGT GCGCACCTGT AATGCCAGCT ACTTGGGAGG CTGAGGCAGG AGGATCACTT GAACCCAGGA  
GGTGGAGGTT GAAGTAAGCC GAGGTGATGC CACTGCACTC CAGCCTGGGC AACAGAGTGA GACTCCATCT CAAAAAATA  
AAAAATGATC AAAGAAAGGT GAATTTTCTAT CTACCTTAT TCTGTGAGG AAAATGGACT ATTTTCAAT ATTTTAAATA  
AGGGTCAAAA TGAGGATC-3' (FRAG. NO: ) (SEQ. ID NO: 2480)  
5'-CTGAGACAG AGGCAGCAGT GATACCCACC TGAGAGATCC TGTGTTTGAA CAACTGCTTC CCAAACGGA  
AAGTATTTCA AGCCTAAACC TTTGGGTGAA AAGAACTCTT GAAGTCATGA TTGCTTCACA GTTCTCTCA GCTCTCACTT  
TGGTGCTTCT CATTAAAGAG AGTGGAGCCT GGTCTTACAA CACCTCCAG GAAGCTATGA CTTATGATGA GGCCAGTGCT  
TATTGTCAAGC AAAGGTACAC ACACCTGGTT GCAATTCAAA ACAAAGAAGA GATTGAGTAC CTAACCTCCA TATTGAGCTA  
TTCACCAAGT TATTACTGGA TTGGAATCAG AAAAGTCAAC AATGTGTGG TCTGGGTAGG AACCCAGAAA CCTCTGACAG  
AAGAAGCCAA GAACTGGGCT CCAGGTGAAC CCAACAATAG GCAAAAAAGAT GAGGACTGCTA CATCAAGAGA  
GAAAAAGATG TGGGCATGTG GAATGATGAG AGGTGCAGCA AGAAGAAGCT TGCCCTATGC TACACAGCTG CCTGTACCAA  
TACATCTGC AGTGGCCAGG GTGAATGTGT AGAGACCATC AATAATTACA CTGCAAGTG TGACCTGGC TTCAGTGGAC

TCAAGTGTGA GCAAATTGTG AACTGTACAG CCCTGGAATC CCTGAGCAT GGAAGCCTGG TTTGCAGTCA CCCACTGGGA  
 AACTTCAGCT ACAATTCTTC CTGCTCTATC AGCTGTGATA GGGGTTACCT GCCAAGCAGC ATGGAGACCA JGCAGTGTAT  
 GTCCTCTGGA GAATGGAGTG CTCCTATTCC AGCCTGCAAT GTGGTTGAGT GTGATGCTGT GACAAATCCA GCCAATGGGT  
 TCGTGGAAATG TTTCCAAAAC CCTGGAAGCT TCCCATGGAA CACAACCTGT ACATTTGACT GTGAAGAAGG /ATTTGAACTA  
 ATGGGAGCCC AGAGCCTTCA GTGTACCTCA TCTGGAATT GGGACAACGA GAAGCCAACG TGTAAGCTG TGACATGCAG  
 GGCCGTCCCG CAGCCTCAGA ATGGCTCTGT GAGGTGCAGC CATTCCCCTG CTGGAGAGTT CACCTTCAA TCATCCTGCA  
 ACTTCACCTG TGAGGAAGGC TTCATGTTGC AGGGACCAGC CCAGGTTGAA TGCACCACTC AAGGGCAGTG GACACAGCAA  
 ATCCCAGTTT GTGAAGCTTT CCAGTGCACA GCCTTGTCAC ACCCGAGCG AGGCTACATG AATTGTCTTC CTAGTGCTTC  
 TGGCAGTTTC CGTTATGGGT CCAGCTGTGA GTTCTCCTGT GAGCAGGGTT TTGTGTTGAA GGGATCCAAA AGGCTCCAAT  
 GTGGCCCCAC AGGGGAGTGG GACAACGAGA AGCCACATG TGAAGCTGTG AGATGCGATG CTGTCCACCA GCCCCGAAG  
 GGTTTGGTGA GGTGTGCTCA TTCCCTATT GGAGAATTCA CCTACAAGTC CTCTGTGCC TTCAGCTGTG AGGAGGGATT  
 TGAATTATAT TGAATCACTC AACTTGAGTG CACATCTCAG GGACAATGGA CAGAAGAGGT TCCTTCTCTG CAAGTGGTAA  
 AATGTTCAAG CCTGGCAGTT CCGGGAAGA TCAACATGAG CTGCAGTGG GAGCCCGTGT TTGGCACTGT GTGCAAGTTC  
 GCCTGTCTG AAGGATGGAC GCTCAATGGC TCTGCAGCTC GGACATGTGG AGCCACAGGA CACTGGTCTG GCCTGCTACC  
 TACCTGTGAA GCTCCCACTG AGTCCAACAT TCCCTTGGTA GCTGGACTTT CTGCTGCTGG ACTCTCCCTC CTGACATTAG  
 CACCATTCTT CTCTGGCTT CGGAAATGCT TACGGAAAGC AAAGAAATTT GTTCTGCCA GCAGCTGCCA AAGCCTTGAA  
 TCAGACGGAA GCTACCAAAA GCCTTCTTAC ATCCTTTAAG TTCAAAAGAA TCAGAAACAG GTGCATCTGG GGAAGTAGAG  
 GGATACACTG AAGTTAACAG AGACAGATAA CTCTCTCGG GTCTCTGGCC CTCTTGCTT ACTATGCCAG ATGCCTTTAT  
 GGCTGAAACC GCAACACCCA TCACCACCTC AATAGATCAA AGTCCAGCAG GCAAGGACGG CCTTCAACTG AAAAGACTCA  
 GTGTTCCCTT TCCTACTCTC AGGATCAAGA AAGTGTGGC TAATGAAGGG AAAGGATATT TTCTTCAAAG CAAAGGTGAA  
 GAGACCAAGA CTCTGAAATC TCAGAATTCC TTTTCTAACT CTCCCTTGT CGCTGTAAAA TCTTGGCACA GAAACACAAT  
 ATTTTGTGGC TTCTTTCTT TTGCCCTTCA CAGTGTTTCG ACAGCTGATT ACACAGTTGC TGTGATAAGA ATGAATAATA  
 ATTATCCAGA GTTTAGAGGA AAAAAATGAC TAAAAATATT ATAACCTAAA AAAATGACAG ATGTTGAATG CCCACAGGCA  
 AATGCATGGA GGGTTGTAA TGGTGCAAAT CCTACTGAAT GCTCTGTGCG AGGGTTACTA TGCACAATT AATCACTTTC  
 ATCCCTATGG GATTCACTGC TTCTTAAAG ATTCTAAGG ATGTGTATAT TTTTACTTGC ATTGAATATA TTATAATCTT  
 CCATACTTCT TCATTCAATA CAAGTGTGGT AGGGACTTAA AAAACTTGT AATGCTGTCA ACTATGATAT GGTAAAAGTT  
 ACTTATCTA GATTACCCCC TCATTGTTA TTAACAAATT ATGTTACATC TGTTTTAAAT TTATTTCAA AAGGGAACT  
 ATTGTCCCT AGCAAGGCAT GATGTTAACC AGAATAAAGT TCTGAGTGT TTTACTACAG TTGTTTTTGG AAAACATGGT  
 AGAATTGGAG AGTAAAAACT GAATGGAAGG TTTGTATATT GTCAGATATT TTTTCAGAAA TATGTGGTTT CCACGATGAA  
 AAACTTCCAT GAGGCCAAAC GTTTTGAAT AATAAAAGCA TAAATGCAAA CACACAAAGG TATAATTTA TGAATGTCTT  
 TGTGGAAAA GAATACAGAA AGATGGATGT GCTTGCATT CCTACAAAGA TGTGTGTCAG ATGTGATATG TAAACATAAT  
 TCTGTATAT TATGGAAGAT TTTAAATTCA CAATAGAAAC TCACCATGTA AAAGAGTCAT CTGGTAGATT TTTAACGAAT  
 GAAGATGTCT AATAGTTATT CCCTATTTGT TTTCTTCTGT ATGTTAGGGT GCTCTGGAAG AGAGGAATGC CTGTGTGAGC  
 AAGCATTAT GTTTATTTAT AAGCAGATT AACAATTCCA AAGGAATCTC CAGTTTTCAG TTGATCACTG GCAATGAAAA  
 ATTCTCAGTC AGTAATTGCC AAAGCTGCTC TAGCCTTGAG GAGTGTGAGA ATCAAACTC TCCTACACTT CCATTAACCT  
 AGCATGTGT GAAAAAAGAA GTTTCAGAGA AGTTCTGGCT GAACACTGGC AACGACAAAG CCAACAGTCA AAACAGAGAT  
 GTGATAAGGA TCAGAACAGC AGAGGTTCTT TAAAGGGGC AGAAAACTC TGGGAAATAA GAGAGAACAA CTACTGTGAT  
 CAGGCTATGT ATGGAATACA GTGTTATTTT CTTTGAAATT GTTTAAGTGT TGTAATATT TATGTAACT GCATTAGAAA  
 TTAGCTGTGT GAAATACCAG TGTGGTTTGT GTTTGAGTTT TATTGAGAAT TTTAAATTAT AACTTAAAT ATTTTATAAT  
 TTTTAAAGTA TATATTTATT TAAGCTTATG TCAGACCTAT TTGACATAAC ACTATAAAGG TTGACAATAA ATGTGCTTAT  
 GTTT-3' (FRAG. NO: ) (SEQ. ID NO: 2479)

5'-CCT TGC CTG CTG G-3' (FRAG. NO: 1739) (SEQ. ID NO: 1750)

5'-GTT GTC CC-3' (FRAG. NO: 1740) (SEQ. ID NO: 1751)

5'-GTT CTT GGC TTC TTC TGT C-3' (FRAG. NO: 1080) (SEQ. ID NO: 1090)

5'-GGC TGG TGG-3' (FRAG. NO: 1083) (SEQ. ID NO: 1093)

5'-CGT TGG CTT CTC GTT GTC CC-3' (FRAG. NO: 1081) (SEQ. ID NO: 1091)

5'-TGT GGG CTT CTC GTT GTC CC-3' (FRAG. NO: 1082) (SEQ. ID NO: 1092)

5'-CCC TTC GGG GGC TGG TGG-3' (FRAG. NO: 1083) (SEQ. ID NO: 1093)

5'-GGC CGT CCT TGC CTG CTG G-3' (FRAG. NO: 1084) (SEQ. ID NO: 1094)

#### Human P Selectin Fragments

5'-TTT TCT CTT TCG CTT TCT TTT CGT CTC CTG TTC CTC CTT TT TTG CTG TTT TTT CTC CTT CTT CTC TCC TTT

CTT TTC-3' (FRAG. NO: 1741) (SEQ. ID NO: 1752)

5'-TCC TTT CTT TTC-3' (FRAG. NO: 1742) (SEQ. ID NO: 1753)

5'-CTC CTT TT-3' (FRAG. NO: 1743) (SEQ. ID NO: 1754)

5'-TTT TCT CTT TCG CTT TCT TTT CGT CTC CTG TTC CTC CTT TT-3' (FRAG. NO: 1085) (SEQ. ID NO: 1095)

5'-TTG CTG TTT TTT CTC CTT CTT CTC TCC TTT CTT TTC-3' (FRAG. NO: 1086) (SEQ. ID NO: 1096)

#### Human Endothelial Monocyte Activating Factor Nucleic Acid and Antisense Oligonucleotide Fragments

5'-TTT TCT CTT TCG CTT TCT TTT CGT CTC CTG TTC CTC CTT TT TTG CTG TTT TTT CTC CTT CTT CTC TCC TTT

CTT TTC-3' (FRAG. NO: 1744) (SEQ. ID NO: 1755)

5'-CC TTT CTT TTC (FRAG. NO: 1745) (SEQ. ID NO: 1756)

5'-CTG TTC CTC CTT TT-3' (FRAG. NO: 1746) (SEQ. ID NO: 1757)

5'-TTT TCT CTT TCG CTT TCT TTT CGT CTC CTG TTC CTC CTT TT-3' (FRAG. NO: 1087) (SEQ. ID NO: 1097)

5'-TTG CTG TTT TTT CTC CTT CTT CTC TCC TTT CTT TTC-3' (FRAG. NO: 1088) (SEQ. ID NO: 1098)

#### Human IL3\* Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CTC TGT CTT GTT CTG GTC CTT CGT GGG GCT CTG TGT CGC GTG G GTG CGG CCG TGG CC GGC GGB CCB GGB GTT  
 GGB GCB GGB GCB GGB CGG GCB GGC GGC TCB TGT TTG GBT CGG CBG GBG GCB CTC (FRAG. NO: 1747) (SEQ. ID NO:  
 1758)

5'-G GBG GCB CTC-3' (FRAG. NO: 1748) (SEQ. ID NO: 1759)

5'-GT GGG GCT CTG-3' (FRAG. NO:1749) (SEQ. ID NO:1760)

HUMIL3AAS1: 5'-CTC TGT CTT GTT CTG GTC CTT CGT GGG GCT CTG-3' (FRAG. NO:1089) (SEQ. ID NO:1099)

HUMIL3AAS2: 5'-TGT CGC GTG G GTG CCG CCG TGG CC-3' (FRAG. NO:1090) (SEQ. ID NO:1100)

GGC GGB CCB GGB GTT GGB GCB GGB GCB GGB CGG GCB GGC GGC TCB TGT TTG GBT CGG CBG GBG GCB CTC (FRAG. NO:1091) (SEQ. ID NO:1101)

#### Human IL3 Receptor Nucleic Acid and Antisense Oligonucleotide Fragments

5'-TCT GGG GTG TCC TGG CCT TCG TGG TTC CTC TTC CTT CGT TTG CCG TCC GCG GGG GCC CCC GGG CCT GGC TGC GCT CCT GCC CCG CCT CTT TCC CGG GCT CTT GCG CTG GGG GGT GCT CC CGT GTG TTT GCG CCC TC CTC CTG GTC GCG CTT GTC GTT TTG GGG CCG GCT TTG CCC GCC TCC CGG CGC CTG GCC CGG CC TTC CTG GGC TGC GTG CGC GTT CTG TTC TTC TTC CTG GCT CTG GGG TGT CCT GGC CTT CGT GGT TCC TCT TCC TTC GTT TGC CGT CCG CGG GGG CCC CCG GGC CT GGC TGC GCT CCT GCC CCG CCT CTT TCC CGG GCT CTT GCG CTG GGG GGT GCT CCC GTG TGT TTG CGC CCT CCT CCT GGT CGC GCT TGT CGT TTT GG GGC CGG CTT TGC CCG CCT CCC GGC GCC TGG CCC GGC CTT CCT GGG CTG CGT GCG GCT TCT GTT CTT CTT GGC GCA GGA GAC AGG GCA GGG CGA TCA GGA GCA GCG TGA GCC AAA GGA GGA CCA TCG GGA ACG CAG CTC CGG AAC GCA GGA CAG AGG TGC C GC BGG BGB CBG GGC BGG GCG BTC BGG BGC BGC GTG BGC CBB BGG BGG BCC BTC GGG BBC GCB GCT CCG GBB CGC BGG BCB GBG GTG CC-3' (FRAG. NO: 1750) (SEQ. ID NO: 1761)

GBG GTG CC-3' (FRAG. NO: 1751) (SEQ. ID NO: 1762)

5'-GCC CCG C-3' (FRAG. NO:1752) (SEQ. ID NO:1763)

5'-TCTGGGGTGTCTCTG (FRAG. NO:1092) (SEQ. ID NO:1102)

5'-GCCTTCGTGGTTCC (FRAG. NO:1093) (SEQ. ID NO:1103)

5'-TCTTCCTTCGTTTGC (FRAG. NO:1094) (SEQ. ID NO:1104)

5'-CGTCCGCGGGGGCCCCGGGCT (FRAG. NO:1095) (SEQ. ID NO:1105)

5'-GGC TGC GCT CCT GCC CCG C (FRAG. NO:1096) (SEQ. ID NO:1106)

5'-CTCTTCCCGGGCTCTT (FRAG. NO:1097) (SEQ. ID NO:1107)

5'-GCGCTGGGGGGTGTCTCC (FRAG. NO:1098) (SEQ. ID NO:1108)

5'-CGTGTGTTTGC GCCCTCTCTGTCGC (FRAG. NO:1099) (SEQ. ID NO:1109)

5'-GCTTGTCTGTTTGG (FRAG. NO:1100) (SEQ. ID NO:1110)

5'-GGCCGGCTTTGCCCGCTCCC (FRAG. NO:1101) (SEQ. ID NO:1111)

5'-GGCCCTGGCCCGCC (FRAG. NO:1102) (SEQ. ID NO:1112)

5'-TTCCTGGGCTGCGTGGC (FRAG. NO:1103) (SEQ. ID NO:1113)

5'-GTTCTGTTCTTCTCTGGC (FRAG. NO:1104) (SEQ. ID NO:1114)

5'-GCB GGB GBC BGG GCB GGB GCB GCB GCG TGB GCC BBB GGB GGB CCB TCG GGB BCG CBG CTC CGG BBC

GCB GGB 5'-CBG BGG TGC C (FRAG. NO:1105) (SEQ. ID NO:1115)

#### Human IL-4 Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CTC TGG TTG GCT TCC TTC GCC GGC BCB TGC TBG CBG GBB GBB CBG BGG GGG BBG CBG TTG GGB GGT GBG BCC CBT TBB TBG GTG TCG B-3' (FRAG. NO: 1753) (SEQ. ID NO: 1764)

5'-GCC GGC BCB-3' (FRAG. NO: 1754) (SEQ. ID NO: 1765)

5'-T TCC TTC-3' (FRAG. NO:1755) (SEQ. ID NO:1766)

5'-CTC TGG TTG GCT TCC TTC-3' (FRAG. NO:1106) (SEQ. ID NO:1116)

5'-GCCGCBCTGCTBGCBBGBBGBCBGBGGGGGBBGCBTGGGGGTGBGBCCCBTTBTTGGGTGTCGB-3' (FRAG. NO:1107) (SEQ. ID NO:1117)

#### Human IL4 Receptor Nucleic Acid and Antisense Oligonucleotide Fragment

5'-TCT GCC CTG TCC GCC GGC TCT TCG GTG GCT CGG CCC CGC TCC TTG TCT TGC CGC GGG TTG GTT CCT GGG CCT GGT TCT TGC GGG CGT TTC GGT CTG CTG GCT GGT CTG GGC CCG CGG TGC GGC GGG TGG CTT GCT GTT CTG CCT GGG CTC TCC CCT CTC CTC CTT TTC TCC CTT CCT CTG TCT TGC CTC CTT CCT CTG GGT CCT CTT GGC CTG GGC GCT CTT CCC CTC GGG CGG CTG CGG GCG CTC GTG CTG CCT GGT CCG CTC CCT GGG GGT GCT CCT TCC CTT TCC CCG CTC GTG GGG TTT GCG GGG CTG GGC TGC CCT GGG GGG TGT GGG CCT TTT GGG GTC GGC TGG CTG CTG CTT CGG GCC GCC TGG GCT TCC CTG TGC CCC TTT CCT CTG CTG GGT CCC CTT CCC GTT CCA AGC TGC ACC GCA CAG ACC GGC GCT ACA GGA CAG AGC CAG GCA AGC ACC CAT GGG GAT CCA GGC CCA GCT GTT CCB BGC TGC BCC GCB CBG BCC GGC GCT BCB GGB CBG BGC CBG GCB BGC BCC CBT GGG GBT CCB GGC CCB GCT G-3' (FRAG. NO: 1756) (SEQ ID NO: 1767)

5'-TCTGCGC-3' (FRAG. NO: 1757) (SEQ ID NO: 1768)

5'-CCT GCT CCT GGG G (FRAG. NO:1758) (SEQ. ID NO:1769)

5'-TCTGCGCGCCCTGTCTCC (FRAG. NO:1108) (SEQ. ID NO:1118)

5'-CGCCCGGCTTCTCT (FRAG. NO:1109) (SEQ. ID NO:1119)

5'-CGTGTGGGCTTCGG (FRAG. NO:1110) (SEQ. ID NO:1120)

5'-CCCCGCGCCTCCGTTGTTCTC (FRAG. NO:1111) (SEQ. ID NO:1121)

5'-TGCTCGCTGGGCTTG (FRAG. NO:1112) (SEQ. ID NO:1122)

5'-GGTTTCTCTGGGGCCCTGGGTTTC (FRAG. NO:1113) (SEQ. ID NO:1123)

5'-TCTGCCGGTCTGTTTTC (FRAG. NO:1114) (SEQ. ID NO:1124)

5'-GGGTGCTGGCTGCG (FRAG. NO:1115) (SEQ. ID NO:1125)

5'-CTTGGTCTGGGGCTCC (FRAG. NO:1116) (SEQ. ID NO:1126)

5'-GGCGGCTGCGGGCTGGGTTGGG (FRAG. NO:1117) (SEQ. ID NO:1127)

5'-CTTGGCTGTTTCTGGCCTCGG (FRAG. NO:1118) (SEQ. ID NO:1128)

5'-CCTCCTCTCTCTCTCGCTCCCTTTTCTTCTCT (FRAG. NO:1119) (SEQ. ID NO:1129)

5'-TCCCTGCTGCTCTC (FRAG. NO:1120) (SEQ. ID NO:1130)

5'-TGCCCTCCCTTCCCTCCTGG (FRAG. NO:1121) (SEQ. ID NO:1131)

5'-GGTGCCTCTTGGGCCCTGC (FRAG. NO:1122) (SEQ. ID NO:1132)

5'-GGCTGCTCCTTGCCCC (FRAG. NO:1123) (SEQ. ID NO:1133)

5'-CTCTGGGTCGGGCTGGC (FRAG. NO:1124) (SEQ. ID NO:1134)  
5'-GGGGCGTCTCTGTGC (FRAG. NO:1125) (SEQ. ID NO:1135)  
5'-CTGGCCTGGGTGCC (FRAG. NO:1126) (SEQ. ID NO:1136)  
5'-GCCTCTCTGGGGGGGTGGCTCCCTGTCC (FRAG. NO:1127) (SEQ. ID NO:1137)  
5'-CCTTTTCCCCGGCTCC (FRAG. NO:1128) (SEQ. ID NO:1138)  
5'-GTGGGGGCTTTGGC (FRAG. NO:1129) (SEQ. ID NO:1139)  
5'-GGG GGT CTG TGG CCT GCT CCT GGG G (FRAG. NO:1130) (SEQ. ID NO:1140)  
5'-AGGGGTCTGGGGCCCTC (FRAG. NO:1131) (SEQ. ID NO:1141)  
5'-TTTTGGGGGTCTGCTTG (FRAG. NO:1132) (SEQ. ID NO:1142)  
5'-GCCTGGCTGCCTCC (FRAG. NO:1133) (SEQ. ID NO:1143)  
5'-GGGGCTGCCGTGGGGC (FRAG. NO:1134) (SEQ. ID NO:1144)  
5'-TGTCCTCTGTGCTCCCTT (FRAG. NO:1135) (SEQ. ID NO:1145)  
5'-TGCCTGCTGTCTGG (FRAG. NO:1136) (SEQ. ID NO:1146)  
5'-GGTTCGCCCTTCCCT (FRAG. NO:1137) (SEQ. ID NO:1147)  
5'-GTT CCC AGA GCT TGC CAC CTG CAG CAG GAC CAG GCA GCT CAC AGG GAA CAG GAG CCC AGA GCA AAG CCA CCC  
CAT TGG GAG ATG CCA AGG CAC CAG GCT G (FRAG. NO:1138) (SEQ. ID NO:1148)  
5'-GTT CCC BGB GCT TGC CBC CTG CBG CBG GBC CBG GCB GCT CBC BGG GBB CBG BGB CCC BGB GCB BBG CCB CCC  
CBT TGG BGB BTG CCB BGG CBC CBG GCT G-3' (FRAG. NO:1139) (SEQ. ID NO:1149)

#### Human IL5\* Nucleic Acid and Antisense Oligonucleotide Fragments

5'-TCCCTGTTTC CCCCTTTTCG TTCTGCGTTT GCCTTTGGCG TTTTGTGTTT GTTTTCTCTC TCCGTCTTTC TTCTCCCT  
GTGGGBBTTT CTGTGGGGBT GGCBTBCBG TBGGCBGCTC CBBGBGCTBG CBBBCTCBBB TGCBGBBGCBC TCCTCBTGGC  
TCTGBBBCGG TGGGAATTTC TGTGGGGBTG GCATACACGT AGGCAGCTCC AAGAGCTAGC AAACCTCAAAT GCAGAAGCATC  
CTCATGGCTC TGAACG-3' (FRAG. NO: 1759) (SEQ. ID NO: 1770)  
5'-GCC CCG GG-3' (FRAG. NO: 1760) (SEQ. ID NO: 1771)  
5'-G GGT TTC T-3' (FRAG. NO: 1761) (SEQ. ID NO: 1772)  
5'-GTG GGG BTG GC-3' (FRAG. NO: 1762) (SEQ. ID NO: 1773)  
5'-CCB BGB GCT BGC-3' (FRAG. NO: 1763) (SEQ. ID NO: 1774)  
5'-TCC CTG TTT CCC CCC TTT-3' (FRAG. NO:1140) (SEQ. ID NO:1150)  
5'-CGT TCT GCG TTT GCC TTT GGC-3' (FRAG. NO:1141) (SEQ. ID NO:1151)  
5'-GTT TTT TGT TTG TTT TCT-3' (FRAG. NO:1142) (SEQ. ID NO:1152)  
5'-CTC TCC GTC TTT CTT CTC C-3' (FRAG. NO:1143) (SEQ. ID NO:1153)  
5'-CCT CCT GCT TGT GTC CCT GCT CCC C-3' (FRAG. NO:1144) (SEQ. ID NO:1154)  
5'-GAG GGT TTC TGG CTT CCT CTC T-3' (FRAG. NO:1145) (SEQ. ID NO:1155)  
5'-TGT CTC TCT GTC CTT TTG TT-3' (FRAG. NO:1146) (SEQ. ID NO:1156)  
5'-TGT TGT GCG GCC TGG TGC TGC CCT GCC CCG GG-3' (FRAG. NO:1147) (SEQ. ID NO:1157)  
5'-GTG GGA ATT TCT GTG GGG BTG GCA TAC ACG TAG GCA GCT CCA AGA GCT AGC AAA CTC AAA TGC AGA AGC ATC  
CTC ATG GCT CTG AAA CG-3' (FRAG. NO: 1764) (SEQ. ID NO: 1775)  
5'-GTG GGB BTT TCT GTG GGG BTG GCB TBC BCG TBG GCB GCT CCB BGB GCT BGC BBB CTC BBB TGC BGB BGC BTC  
CTC BTG GCT CTG BBB CG-3' (FRAG. NO:1148) (SEQ. ID NO:1158)

#### Human IL-5 Receptor Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CTCAGTGGCC CCCAAAAGGA TGAGTAATAC ATGCGCCACG ATGATCATAT CCTTTTACT ATGAGGCCGT GTCTGTCGTG  
TCTTCTCTT GCTCTTGGT TGTCTTGGT GTGCCCTGCC TCTGCCCCG TGTCTGTCGT GTCTTCTCTT TGCTCTGGT  
GTGTCTTGC TGTGCCCTGC CTCTCTGCC CGTGCTGTC GTGTCTTCC TTTGCTCTG GTGTGCTTT GCTGTGCCCT  
GCCTCTCTGC-3' (FRAG. NO: 1765) (SEQ. ID NO: 1776)  
5'-CCG TGT C-3' (FRAG. NO: 1766) (SEQ. ID NO: 1777)  
5'-GCCCTGCC-3' (FRAG. NO: 1767) (SEQ. ID NO: 1778)  
5'-CCG TGT CTG TCG TGT CT-3' (FRAG. NO:1149) (SEQ. ID NO:1159)  
5'-TTCCTTTGCTCTTG-3' (FRAG. NO:1150) (SEQ. ID NO:1160)  
5'-GTGTGCTTTGCTGT-3' (FRAG. NO:1151) (SEQ. ID NO:1161)  
5'-GCCCTGCCTCTCTGC-3' (FRAG. NO:1152) (SEQ. ID NO:1162)  
5'-CT CBGTGGCCCC CBBBGGBTG BGTBTTBCBT GCGCCBCGT GBTCTBTCC TTTTBTCTBT GBGG (FRAG. NO: 1768)  
(SEQ. ID NO: 1779)

#### Human IL-6 Receptor Fragments

5'-GGGGGTGGCT TCCTGCCGCG TCTTGGGGC GTCCCGTCCC TCGGCCCCGC GCCGCGCTCG GCTCCTCTCC CTCTGGCCCC  
GCTCGGGGCG GGGCGGGGCG GTGGGCGGGC GGCCTGCCC TGC CGCGGC GCTGGCCCT GCTGGCCGTC GGCTGCGCGC  
TGCTGGCTGC CCTGCTGGCC GCGCCGGGGC CTGTCCGCT CTGCGGGCGC TGTCTCTGG CTGTCTTCC GGCTCTTCTG  
CTGGGGTGGG GCTGGGCGGC CGGCCGGTG CTGGGGCTCC TCGGGGGGGG GGGCTCTCC GGGCTGTCTC CCTCCGGGGC  
GGGGGTTTCT GGCGTGGGG GTCTTCCTG GCCTCCGGGC TCCTGCTTGT CTGCGCTCC TTCTCTGGTC GGTTGTGGCT  
CGGGGCTCCG TGGGTCCCTG GCGCCCGTTT GTGTTTGTG TTTTCCCTG GCGTCCCTGT GCCCTCTCC TCTCCTCCT  
CTGCTTCTG CTCTCCTTG TGGGGCCCTC CTGCTGCTC TTGGTTTGG GCTTTTTTC TCTTCTCCT TTTTCGTGCG  
TGGGCTCCG CACGCTCTT GCCACCTCT GCGCAGGCA GCGCTTGG GGCCAGCGCC GCTCCCGGC CGGCCAGCAG  
GGCAGCCAGC AGCGCGCAGC CGACGGCCAG CATGCTTCT CTCTGGCTAC CACTCCATGG TCCCGCAGAG GCGGACAGAG  
GCBGCGCTC TTGCCBCCTC CTGCGCBGGG CBGCGCCTG GGGCCBGGC CGTCCCGGC GCGGCCBGCB GGGCBGCCBG  
CBGCGCGCBG CCGBCGGCCB GCBTGCTTCC TCCTCGGCTB CCBCTCCBTG GTCCCGCBGB GGCGGBCBGG C-3'  
(FRAG. NO: 1769) (SEQ. ID NO: 1780)  
5'-CCCGGCGC-3' (FRAG. NO:1184) (SEQ. ID NO:1194)  
5'-GGCCBGCBBG-3' (FRAG. NO:1186) (SEQ. ID NO:1196)  
5'-GCBGCCBGCBBG-3' (FRAG. NO: 1770) (SEQ. ID NO: 1781)



5'-C GCBGCCBCCGCC -3' (FRAG. NO: 1771) (SEQ. ID NO: 1782)  
5'-GGGGGTGGCTTCCTGCC-3' (FRAG. NO:1153) (SEQ. ID NO:1163)  
5'-GCGTCTCTGGGCGTCCC-3' (FRAG. NO:1154) (SEQ. ID NO:1164)  
5'-GTCCCTCGGCCCCCGCGCGCTCGGCTCCTCTCCC-3' (FRAG. NO:1155) (SEQ. ID NO:1165)  
5'-TCTGGCCCGCTC-3' (FRAG. NO:1156) (SEQ. ID NO:1166)  
5'-GGGGCGGGGCGGGGCGGTGGGCGGGC-3' (FRAG. NO:1157) (SEQ. ID NO:1167)  
5'-GGCGCTGCCCTGCGC-3' (FRAG. NO:1158) (SEQ. ID NO:1168)  
5'-GCGGCGCTGGCCCC-3' (FRAG. NO:1159) (SEQ. ID NO:1169)  
5'-TGCTGGCGCTCGGCTGCGCGCTGCTGGCTGCCCT-3' (FRAG. NO:1160) (SEQ. ID NO:1170)  
5'-GCTGGCCGCGCCGGG-3' (FRAG. NO:1161) (SEQ. ID NO:1171)  
5'-GCCTGTCCGCTCTGCGGG-3' (FRAG. NO:1162) (SEQ. ID NO:1172)  
5'-CGCTGTCTCCTGGC-3' (FRAG. NO:1163) (SEQ. ID NO:1173)  
5'-TTGTCTCCGGCTCT-3' (FRAG. NO:1164) (SEQ. ID NO:1174)  
5'-TCTGCTGGGGTGGG-3' (FRAG. NO:1165) (SEQ. ID NO:1175)  
5'-GCTGGGCGGCCGCGCCGGT-3' (FRAG. NO:1166) (SEQ. ID NO:1176)  
5'-GCTGGGGCTCCTCGGGGGG-3' (FRAG. NO:1167) (SEQ. ID NO:1177)  
5'-GGGGGCTCTTCCGG-3' (FRAG. NO:1168) (SEQ. ID NO:1178)  
5'-GCTGTCTCCCTCCGGG-3' (FRAG. NO:1169) (SEQ. ID NO:1179)  
5'-GCGGGGGTTTCTGGCC-3' (FRAG. NO:1170) (SEQ. ID NO:1180)  
5'-GTGGGGGTCTTGCC-3' (FRAG. NO:1171) (SEQ. ID NO:1181)  
5'-TGGCCTCCGGGCTCC-3' (FRAG. NO:1172) (SEQ. ID NO:1182)  
5'-TGCTGTCTTGCCCTTCCTC-3' (FRAG. NO:1173) (SEQ. ID NO:1183)  
5'-TCTGTGCGTTGTGGCTCG-3' (FRAG. NO:1174) (SEQ. ID NO:1184)  
5'-GGGTCCGTGGGTCCCTGGC-3' (FRAG. NO:1175) (SEQ. ID NO:1185)  
5'-GCCCCGTTGTGTTTTGTC-3' (FRAG. NO:1176) (SEQ. ID NO:1186)  
5'-TTTTCCCTGGCGT-3' (FRAG. NO:1177) (SEQ. ID NO:1187)  
5'-CCCTGTGCCCTCTCCTCTCCTCTGCTTCTC-3' (FRAG. NO:1178) (SEQ. ID NO:1188)  
5'-GCTCTCCTTTGTGGG-3' (FRAG. NO:1179) (SEQ. ID NO:1189)  
5'-GCCCTCCCTGCTGCT-3' (FRAG. NO:1180) (SEQ. ID NO:1190)  
5'-CTTGGTTTTTGGGCT-3' (FRAG. NO:1181) (SEQ. ID NO:1191)  
5'-TTTTTCTCTTCTCCTTTTTC-3' (FRAG. NO:1182) (SEQ. ID NO:1192)  
5'-GTGCGTGGGCTCC-3' (FRAG. NO:1183) (SEQ. ID NO:1193)  
5'-  
GCACGCCTCTTGCCACCTCCTGCGCAGGGCAGCGCCTTGGGGCCAGCGCCGCTCCCGGCGCGGCCAGCAGGGCAGCCAGCAGCG  
CGCAGCCGACGGCCAGCATGCTTCTCCTCGGCTACCACTCCATGGTCCCGCAGAGGCGGACAGGC-3'  
(FRAG. NO:1185) (SEQ. ID NO:1195)  
5'-  
GCBGCGCTCTTGCCBCTCTGCGCBGGGCBGCGCCTTGGGGCCBGGCGCGCTCCCGGCGCGGCCBGGGCBGCCBGGC  
GCBGCCBGGGCCBGGCTTCTCCTCGGCTBCCBCTCBTGGTCCCGCBGGGCGGBCBGGC-3'  
(FRAG. NO:1187) (SEQ. ID NO:1197)

#### Human IL-6 Nucleic Acid and Antisense Oligonucleotide Fragments

5'-GGGGGTGGCT TCCTGCCGCG TCTCTGGGCC GTCCCGTCCC TCGGCCCGCG GCCGCGCTCG GCTCCTCTCC CTCTGGCCCCG  
GCTCGGGGCG GGGCGGGGCG GTGGGCGGGC GCGCTGCCC TGCGCGCGG GCTGGCCCCCT GCTGGCCGTC GGCTGCGCGC  
TGCTGGCTGC CCGTCTGGCC GCGCCGGGGC CTGTCCGCTC CTGCGGGCGC TGTCTCCTGG CTGTCTTCC GGCTCTTCTG  
CTGGGGTGGG GCTGGGCGGC CGGCCCGGTG CTGGGGCTCC TCGGGGGGGG GGGCTCTTCC GGGCTGTCTC CCTCCGGGGC  
GGGGGTTTCT GGCGTGGGG GTCTTGCTG GCCTCCGGGC TCCTGCTTGT CTGCGCTTCC TTCTCTGGTC GGTGTGGCT  
CGGGGCTCCG TGGGTCCCTG GCGCCCGTTT GTGTTTGTG TTTTCCCTG GCGTCCCTGT GCCCTCTCC TCTCCTCCT  
CTGCTTCTG CTCTCCTTG TGGGGCCCTC CCGTCTGCTC TTGGTTTGG GCTTTTTTC TCTCCTCCT TTTTCGTGCG  
TGGGCTCC GCACGCTCT TGCCACCTC TGCGCAGGG AGCGCCTTG GGCCAGCGCC GCTCCCGCG CGGCCAGCAG  
GGCAGCCAGC AGCGCGCAGC CGACGCCAG CATGCTTCTC CTGCGGTAC CACTCCATGG TCCCGCAGAG GCGGACAGGC  
GCBGCGCTC TTGCCBCTC CTGCGCBGGG CBGCGCCTTG GGGCCBGGC CGTCCCGGC GCGGCCBGB GGGCBGCCB  
CBGCGCGCB CCGBCGGCB GCBTGCTTCC TCCTCGGCTB CCBCTCCBTG GTCCCGCBG GCGGBCBGG C-3' (FRAG.  
NO:1772) (SEQ. ID NO:1783)  
5'-GGGCBGG-3' (FRAG. NO:1773) (SEQ. ID NO:1784)  
5'-GBBGGCBG CBGGC-3' (FRAG. NO:1774) (SEQ. ID NO:1785)  
5'-CCBGGBCBG CCCC-3' (FRAG. NO:1775) (SEQ. ID NO:1786)  
5'-BGGG BGGGGCBBC-3' (FRAG. NO:1776) (SEQ. ID NO:1787)  
5'-GCT TCT CTT TCG TTC CCG GTG GGC TCG-3' (FRAG. NO:1188) (SEQ. ID NO:1198)  
5'-GTG GCT GTC TGT GTG GGG CGG CT-3' (FRAG. NO:1189) (SEQ. ID NO:1199)  
5'-GTG CCT CTT TGC TGC TTT C-3' (FRAG. NO:1190) (SEQ. ID NO:1200)  
5'-GAT TCT TTG CTT TTT TCT GC-3' (FRAG. NO:1191) (SEQ. ID NO:1201)  
5'-CTCCTGGGGG TCTGGGCB GGGBBGGCBG CBGGCBBCB CBGGCBGCG CCCBGGGBGB BGGCBCTGG BCCBBGGCG  
CTTGTGGGB BGGBTCTB BGCTGGGCTC CTGGBGGGB GBTBGGC-3' (FRAG. NO:1777) (SEQ. ID NO:1788)

#### Human Monocyte-derived Neutrophil Chemotactic Factor

##### Nucleic Acid and Antisense Oligonucleotide Fragments

5'-GGGGTGGBBB GGTTTGGBT BTGTCTTBT GCBCTGCBT CTBBGTCTT TBGCBCTCCT TGGCBBBCT GCBCTTCBC  
BCBGBGCTGC BGGBTBCCG BBGGCTGCCB BGGBGGCCBC GGCCBGCTTG GBBGTCTGT TBBCBCCBG TGBGTGGTT  
CCTCCGGGC TTGTGTGCTC TGCTGTCTC TGGTTCTTC CGGTGGTTTC TTCCTGGCTC TTGCTTTTC TCTTGG CCCT  
TGGC-3' (FRAG. NO:1778) (SEQ. ID NO: 1789)

5'-GGBGT BTG-3' (FRAG. NO:1779) (SEQ. ID NO: 1790)  
 5'-GCBCTGBCBT CT-3' (FRAG. NO:1780) (SEQ. ID NO:1791)  
 5'-CCG GTG G-3' (FRAG. NO:1781) (SEQ. ID NO: 1792)  
 5'-GG CCC TTG GC-3' (FRAG. NO:1782) (SEQ. ID NO: 1793)  
 5'-GCT TGT GTT CTC TGC TGT CTC T-3' (FRAG. NO:1192) (SEQ. ID NO:1202)  
 5'-TGG TTC CTT CCG GTG GTT TCT TCC TGG CTC TTG TCC T-3' (FRAG. NO:1193) (SEQ. ID NO:1203)  
 5'-TTC TCT TGG CCC TTG GC-3' (FRAG. NO:1194) (SEQ. ID NO:1204)  
 5'-GGGGTGGBBB GGTTTGGBT BTGTCTTTBT GCBCTGBCBT CTBBGTTCTT TBGCBCTCCT TGGCBBBCT GCBCTTCBC BCBGBC-3' (FRAG. NO:1783) (SEQ. ID NO: 1794)

#### Human Neutrophil Elastase (Medullasin) Nucleic Acid and Antisense Oligonucleotide Fragments

5'-GGGCTCCCGC CGCBGBGGT TBTGGGCTCC CBGGBCBCC CGCBCCGCGC GGBCGTTTBC BTTCGCCBCG CBGTGCGCGG CCBGCBTGC BGGTTGGGC GCBTBCBGGG TGGCGCCGB BGGTGGCCT CCGCGCBGCT GCBGGGBCBC CBTGBBGGGC CBGCGTGGG GCGCGCTCG CCGGCCCCC BCBTCTCCG BGGCCBGGC GGTGCCCCC BCBGCBGGG CCGGCBGGC BCBGGCGBG BGCBCGCBG GTCGGCGGCC BGGGTCTBTG GTGGGCTGG GGCTCCGGG TCTCTGCCC TCCGTGCTGG TGGGCTGGG GTCGCGGG TCTCTGCCC TCCGTGCGC GTGGGGECGC GTCGCGCGC CCCCCCTGC CCGGTGGGCT CCGGCGCGC GCGGCTGC CGGCCCTCG TGGTCTGC TGGCGGGT CCGGTCCCG GGTGGGGC GCBGTGCGG GCCGBGGT-3' (FRAG. NO:1784) (SEQ. ID NO: 1795)  
 5'-GG TGG GGC-3' (FRAG. NO:1785) (SEQ. ID NO: 1796)  
 5'-G GGG CCG -3' (FRAG. NO:1786) (SEQ. ID NO:1797)  
 5'-GGC CGG GTC CGG G-3' (FRAG. NO:1787) (SEQ. ID NO: 1798)  
 5'-TGG TGG GGC TGG GGC TCC GGG GTC TCT GCC CCT CCG TGC-3' (FRAG. NO:1195) (SEQ. ID NO:1205)  
 5'-CGC GTG GGG CCG CGC TCG CCG GCC CCC C-3' (FRAG. NO:1196) (SEQ. ID NO:1206)  
 5'-CCT GCC GGG TGG GCT CCC GCC GCG-3' (FRAG. NO:1197) (SEQ. ID NO:1207)  
 5'-CGC CGG CCT GCC GGC CCC TC-3' (FRAG. NO:1198) (SEQ. ID NO:1208)  
 5'-GTG GGT CCT GCT GGC CGG GTC CGG GTC CCG GGG GTG GGG-3' (FRAG. NO:1199) (SEQ. ID NO:1209)  
 5'-CGC GBG TCG GCG GCC GBG GGT C-3' (FRAG. NO:1200) (SEQ. ID NO:1210)  
 5'-GGGCTCCCGC CGCBGBGGT TBTGGGCTCC CBGGBCBCC CGCBCCGCGC GGBCGTTTBC BTTCGCCBCG CBGTGCGCGG CCBGCBTGC BGGTTGGGC GCBTBCBGGG TGGCGCCGB BGGTGGCCT CCGCGCBGCT GCBGGGBCBC CBTGBBGGGC CBGCGTGGG GCGCGCTCG CCGGCCCCC BCBTCTCCG BGGCCBGGC GGTGCCCCC BCBGCBGGG CCGGCBGGC BCBGGCGBG BGCBCGCBG GTCGGCGGCC BGGGTCTBTG GTGGGCTGG GGCTCCGGG TCTCTGCCC TCCGTGC-3' (FRAG. NO:1788) (SEQ. ID NO: 1799)

#### Human Neutrophil Oxidase Factor Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CGGGBGTGGG GGTCTGGBC GGCCTGBBG GCBTCCBGGG CTCCTTCCB GTCCTTCTG TCCGCTGCC GCBCCCTTC BTTCBGGG GGTGGGCT CCBCCBGGG CBTGTTBGG TBGBBCTBG GBGGCGGCC TCCBCCGGG BCBTGTCTT TCTGTCCG TGCCTCTG GGTTTTCG TCTGGGTGG CTTCTCTCT GGGGCTGCTG CTGGGCTCTT CTTTTGTT CTGGCCTGT GCTCTCTG GCCCTTCC TGGGTGTCT GTTTTGTG GCCTCCBCC GGBCBTG-3' (FRAG. NO:1789) (SEQ. ID NO: 1800)  
 5'-CGGGBGTGGG GG-3' (FRAG. NO:1790) (SEQ. ID NO: 1801)  
 5'-GCCBGCBCCC-3' (FRAG. NO:1791) (SEQ. ID NO: 1802)  
 5'-C CBC CBG-3' (FRAG. NO:1792) (SEQ. ID NO: 1803)  
 5'-GGC CTC CBC CBG GGB CBT G-3' (FRAG. NO:1201) (SEQ. ID NO:1211)  
 5'-GTC CTT CTT GTC CGC TGC C-3' (FRAG. NO:1202) (SEQ. ID NO:1212)  
 5'-TCT CTG GGG TTT TCG GTC TGG GTG G-3' (FRAG. NO:1203) (SEQ. ID NO:1213)  
 5'-GCT TTC CTC CTG GGG CTG CTG CTG-3' (FRAG. NO:1204) (SEQ. ID NO:1214)  
 5'-GGC TCT TCT TTT TGT TTC TGG CCT GGT G-3' (FRAG. NO:1205) (SEQ. ID NO:1215)  
 5'-CTC TCT CGT GCC CTT TCC-3' (FRAG. NO:1206) (SEQ. ID NO:1216)  
 5'-CTT GGG TGT CTT GTT TTT GT-3' (FRAG. NO:1207) (SEQ. ID NO:1217)  
 5'-GGC CTC CBC CBG GGB CBT G-3' (FRAG. NO:1208) (SEQ. ID NO:1218)  
 5'-CGGGBGTGGG GGTCTGGBC GGCCTGBBG GCBTCCBGGG CTCCTTCCB GTCCTTCTG TCCGCTGCC GCBCCCTTC BTTCBGGG CTGTTGGCT CCBCCBGGG CBTGTTBGG TBGBBCTBG GBGGC-3' (FRAG. NO:1793) (SEQ. ID NO: 1804)

#### Human Cathepsin G Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CCCTCCBCBT CTGCTCTGBC CTGCTGGBCT CTGGBTCTGB BGTBCGCCB TGTBGGGGC GGBGTGGGGC CTGCTCTCC GGCCTCCBT GBTCTCCCT GCCTCBGCC CBGTGGGTBG GBGBBGGCC BGCBBBGC BGGTGGCTG CBTCTTCTT GGTGGGGCT GCTCTCCCG CCTCCGTGTG TTGCTGGGTG TTTCCCGTC TCTGGTCTG CTTCGGGGT CGT-3' (FRAG. NO:1794) (SEQ. ID NO: 1805)  
 5'-GBBGTBCGCC-3' (FRAG. NO:1795) (SEQ. ID NO: 1806)  
 5'-CBGCCCCBG-3' (FRAG. NO:1796) (SEQ. ID NO: 1807)  
 5'-TCC CGT CTC TGG-3' (FRAG. NO:1797) (SEQ. ID NO: 1808)  
 5'-GTG GGG CCT CTC CCG GCC TCC G-3' (FRAG. NO:1209) (SEQ. ID NO:1219)  
 5'-TGT GTT GCT GG GTG TTT TCC CGT CTC TGG-3' (FRAG. NO:1210) (SEQ. ID NO:1220)  
 5'-TCT GCC TTC GGG GGT CGT-3' (FRAG. NO:1211) (SEQ. ID NO:1221)  
 5'-CCCTCCBCBT CTGCTCTGBC CTGCTGGBCT CTGGBTCTGB BGTBCGCCB TGTBGGGGC GGBGTGGGGC CTGCTCTCC GGCCTCCBT GBTCTCCCT GCCTCBGCC CBGTGGGTBG GBGBBGGCC BGCBBBGC BGGTGGCTG-3' (FRAG. NO:1798) (SEQ. ID NO: 1809)

#### Human Defensin 1 Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CCGGGGCTGC BGCBBCTCB TCBGCTCTG CCTGGGTGG CTCBGCTGG GCCTCBGGG CCBCCBGGG BBTGGCBGC BGGTGGCGB GGGTCTCTB GGCTGGGGT CCBGTCCTC TBGCTBGGC GGGTBCCBG BGBGGC GGG TCC TCB TGG

CTG GGG GCC TGG GCC TGC BGG GCC GCT CTT GCC TGG BGT GGC TC GCC CBG BGT CTT CCC TGG T GCTCAGCCTC  
CAAAGGAGCC AGCCTCTCCC CAGTTCCTGA AATCCTGAGT GTTGCTGCC AGTCGCCATG AGAACTTCCT ACCTTCTGCT  
GTTTACTCTC TGCTTACTTT TGTCTGAGT GGCCTCAGGT GGTAACCTTC TCACAGGCCT TGGCCACAGA TCTGATCATT  
ACAATTGCGT CAGCAGTGGA GGGCAATGTC TCTATTCTGC CTGCCCGATC TTTACCAAAA TTCAAGGCAC CTGTTACAGA  
GGGAAGGCCA AGTGCTGCAA GTGAGCTGGG AGTGACCAGA AGAAATGACG CAGAAGTGAA ATGAACCTTT TATAAGCATT  
CTTTAATAA AGGAAATTTG CTTTGAAGT AT CTGCAGTGGT AAAAAGATTG TATATCTGCT GTTTGATGAA  
TGCAGCACCC ACTAGCCACA TAGTGCTCGT GAGCACTTGC AATGCGGCTA GGGTGATTC AATTAACCTA AAAGAGAACA  
GCCACAGGGA GCATGTGGCT GCCATATTGG ATGGTGCTGC TTTGAGAACA AAATGAGAGA AATGAAGCCT CTATTTACCT  
TGGTTGGCGG AACACATTGA AGGGACTCTG TATTGATACC AGGCTTCAAA CTTTGGGAAG TGTACTGGCC AACTTAAACA  
CATCCACAGG AGAATGAAGA GGTITGGGAA GGGACCAGAA ACCAGGCATT GAGGACAATG AGAAGAGTTT TTCAAAAGTG  
GAATTACTGC AAAAAGTGGA AAAATAGCCT TTGGATGGAA GTTACTGATG AGACAATTTT CATCGGTGTG AAAGCCATCT  
TTCAAACAGA GATCTGCAAC ATGAGAATGT ACTGTCTCCT AGGTAGCGA TGGCCTCTTG TATTAGTCCG CTCAGGCTAC  
CAGATTTATC GTTTAAACTG CCCATAACA GACCAGCGCA TTTAAACAAC AGAAATTTAT TTCTCTCGAG TCCTGGAGGC  
AGGAAGTCTG CGATCAAGGT GGAAGCAGGG TTGGCTTCTT CTCAGGTGTC TGTCTTGGC TGTCTTGGC CCGCCGCTC  
CCTGGGCTCT CACATGGTCT TTCTCTGTG TGTGTCTGTC CCAATCTCTT CTTATAAGGA TGCAAGTCTT ATGGATCAGA  
GCACACCCCA ATGACCGTGT TTAACCTGAA TCACCTCTTT AAAGTTTCTC TCTCCAAATA CAATCACCTC CTGAGGCACT  
GTTAGGGCTT CGACACAGGA ATTCTTTTCC TAGGGGATTC AGTTCAGTCC AAAACGCCTA CCAGTGGAGA CTTGCAACAT  
GGCGGCTGCT TGTCCCTCG CCAGGAATAT CACAGGCGAC TGTCCCTGT TGCATGGAAT AGAAGGCTAT TCCAGAGTAC  
TGTCTTATT TATCAGATCT GGGATACTGG GAGAAGGCCA AAATAAGTCT CAAGTAGAAA AAAAAGTAT GAAAGTTTAA  
GAGAGTAACC ATAATTTTCA CCCGATGTGA AACGATCCTA GATTTTCAGT GAAATAGTGA TGTGGGAAGT GAGGGGGCGG  
GGATTCAGG CAGAGGGAAC AGCGTAACTG AAGGCATGGA AGGAGGGAAG TGTAGGCTGT GTTTGAAGAG TGGCAGCTGC  
TTCCACATTT CTAACACACA GGATGTGATT TTGGGGTGTG TTGAGACAAG GCAGAAAAT TGTITGGAAA AATAACTTGA  
ATTCCCTGCA CATTTAAAT CTCTCAGCAG AAGAAAACCC CACTCAGAAC CCCACTGTTC ATTCTTGGC TGTATTTGG  
SCACAGCTGG CATAGCCCCA GACTGAGTAA GCTCTTCAGA CACCTCATTT CATGAGTAGC CCCAAAGATC AATCATGGGC  
CAATTTCTTG GAAGAGAAGA CTCTCCGGTG TTTTGCAGTT ATTTGTCTG CTTTCGCGAG ATGTTCTCAA ATCGTTGCAG  
CTACAAGCCA TGAGTCTGAA GTGTTTGTGT TCCCTCCTTA CAGGTGGTAA CTTTCTACA GCGCTTGGC ACAGACTGTA  
TCATTACAAT TGCCTCAGCA GTGGAGGGCA ATGTCTCTAT TCTGCTGCC CGATCTTAC CAAAATTCAG GGCACCTGTT  
ACAGAGGGAA GGCCAAGTGC TGCAAGTGAG CTGAGAGTGA CCAGAAGAAA TGACGCAGAA GTGAAATGAA CTTTTTATAA  
GCATCTTTT AATAAAGGAA AATTGCTTTT GAAGTATACC TCTTTGGGC CAAAATGAAT CTGTGTCTC AATTGGAAGA  
GGTAAAGAAG TAGGGGGTTA GGGTGCATGG GTTGAACGT GAGACAGGTC GAACCACAAA GCCTGCTGG AAAAGGGGAG  
TGACGTCCTA GAGTCTGAT ATGTCACCTC CACTTTGTTT GATCCACAAA CCAACAGGTG ACTGATTTT GTCAGCTCAG  
CCTCCAAAGG AGCCAGCTC TCCCAAGTTC CTGAAATCCT GAGTGTGCTG TGCCAGTGC CATGAGAACT TCCTACCTTC  
TGCTGTTTAC TCTCTGCTTA CTTTTGTCTG AGATGGCTC AGGTGGTAAC TTTCTCACAG GCCTTGGCCA CAGATCTGAT  
CATTACAATT GCGTCAGCAG TGGAGGGCAA TGTCTCTATT CTGCTGCCC GATCTTTACC AAAATTCAAG GCACCTGTTA  
CAGAGGGAAG GCCAAGTGCT GCAAGTGAGC TGGGAGTGAC CAGAAGAAAT GACGCAGAAG TGAATGAAC TT

-3' (FRAG.NO:1799) (SEQ. ID NO: 1810)

5'-GTCAGCTCAG CCTCCAAAGG AGCCAGCTC TCCCAAGTTC CTGAAATCCT GAGTGTGCTG TGCCAGTGC CATGAGAACT  
TCCTACCTTC TGCTGTTTAC TCTCTGCTTA CTTTGTCTG AGATGGCTC AGGTGGTAAC TTCTCACAG GCCTTGGCCA  
CAGATCTGAT CATTACAATT GCGTCAGCAG TGGAGGGCAA TGTCTCTATT CTGCTGCCC GATCTTTACC AAAATTCAAG  
GCACCTGTTA CAGAGGGAAG GCCAAGTGCT GCAAGTGAGC TGGGAGTGAC CAGAAGAAAT GACGCAGAAG TGAATGAAC  
TT-3' (FRAG.NO: ) (SEQ. ID NO: 2475)

5'-CTGCAGTGGT AAAAAGATTG TATATCTGCT GTTTGATGAA TGCAGCACCC ACTAGCCACA TAGTGCTCGT GAGCACTTGC  
AATGCGGCTA GGGTGATTTT AATTAACCTA AAAGAGAACA GCCACAGGGA GCATGTGGCT GCCATATTGG ATGGTGCTGC  
TTTGAGAACA AAATGAGAGA AATGAAGCCT CTATTTACCT TGGTTGGCGG AACACATTGA AGGACTCTG TATTGATACC  
AGGCTTCAAA CTTTGGGAAG TGTACTGGCC AACTTAAACA CATCCACAGG AGAATGAAGA GGTITGGGAA GGGACCAGAA  
ACCAGGCATT GAGGACAATG AGAAGAGTTT TTCAAAAGTG GAATTACTGC AAAAAGTGGA AAAATAGCCT TTGGATGGAA  
GTTACTGATG AGACAATTTT CATCGGTGTG AAAGCCATCT TTCAAACAGA GATCTGCAAC ATGAGAATGT ACTGTCTCCT  
AGGGTAGCGA TGGCCTCTTG TATTAGTCCG CTCAGGCTAC CAGATTTATC GTTTAAACTG CCCATAACA GACCAGGCAG  
TTTAAACAAC AGAAATTTAT TTCTCGCAG TCCTGGAGGC AGGAAGTCTG CGATCAAGGT GGAAGCAGGG TTGGCTTCTT  
CTCAGGTGTC TGTCTTGGC TGGTAGATGA CCGCGGCTC CTTGGTCTCT CATATGGTCT TTCTCTGTG TGTGTCTGTC  
CCAATCTCTT CTTATAAGGA TGCAAGTCTT ATGGATCAGA GCACACCCCA ATGACCGTGT TTAACCTGAA TCACCTCTTT  
AAAGTTTCTC TCTCCAAATA CAATCACCTC CTGAGGCACT GTTAGGGCTT CGACACAGGA ATTCTTTTCC TAGGGGATTC  
AGTTCAGTCC AAAACGCCTA CCAGTGGAGA CTTGCAACAT GGCGGCTGC TGGTCCCTCG CCAGGAATAT CACAGGCGAC  
TGTCCCTGT TGCATGGAAT AGAAGGCTAT TCCAGAGTAC TGTCTCTATT TATCAGATCT GGGATACTGG GAGAAGGGCA  
AAATAAGTCA CAAGTAGAAA AAAAAGTAT GAAAGTTTGA GAGAGTAACC ATAATTTTCA CCCGATGTGA AACGATCCTA  
GATTTAGCT GAAATAGTGA TGTGGGAAGT GAGGGGGCCG GGATTCAGG CAGAGGGAAC AGCGTAACTG AAGGCATGGA  
AGGAGGGAAG TGTAGGCTGT GTTTGAAGAG TGGCAGCTGC TTCCACATT CTAAACACA GGATGTGATT TTGGGGTGTG  
TTGAGACAAG GCAGAAAAT TGTITGGAAA AATAACTTGA ATTCCCTGCA CATTTAAAT CTCTCAGCAG AAGAAAACCC  
CACTCAGAAC CCCACTGTTC ATTCTTGGC TTGATTTGG SCACAGCTGG CATAGCCCCA GACTGAGTAA GCTCTTCAGA  
CACCTCATTT CATGAGTAGC CCCAAAGATC AATCATGGGC CAATTTCTTG GAAGAGAAGA CTCTCCGGTG TTTTGCAGTT  
ATTTGTCTG CTTTCGCGAG ATGTTCTCAA ATCGTTGCAG CTACAAGCCA TGAGTCTGAA GTGTTTGTGT TCCCTCCTTA  
CAGGTGGTAA CTTTCTACA GGCCTTGGCC ACAGACTGTA CTATTACAAT TGCCTCAGCA GTGGAGGGCA ATGTCTCTAT  
TCTGCTGCC CGATCTTTAC CAAAATTCAG GGCACCTGTT ACAGAGGGA GGCCTAGTGC TGCAAGTGC CTGAGAGTGA  
CCAGAAGAAA TGACGCAGAA GTGAAATGAA CTTTTTATAA GCATTTCTTT AATAAAGGAA AATTGCTTTT GAAGTATACC  
TCCTTGGGC CAAAATGAAT CTGTGTCTC AATTGGAAGA GGTAAAGAAG TAGGGGGTTA GGGTGCATGG GTTGAACGT  
GAGACAGGTC GAACCACAAA GCCTGCTGG AAAAGGGGAG TGACGTCCTA GGCTTCAGTG ATGTCACCTC CACTTTGTTT  
GATCCACAAA CCAACAGGTG ACTGATTTT-3' (FRAG.NO: ) (SEQ. ID NO: 2474)

5'-GCTCAGCTC CAAAGGAGCC AGCCTCTCCC CAGTTCCTGA AATCCTGAGT GTTGCTGCC AGTCGCCATG AGAACTTCCT  
ACCTTCTGCT GTTACTCTC TGCTTACTTT TGTCTGAGAT GGCCTCAGGT GGTAACCTTC TCACAGGCCT TGGCCACAGA

TCTGATCATT ACAATTGCGT CAGCAGTGGG GGGCAATGTC TCTATTCTGC CTGCCGATC TTTACCAAAA TTCAAGGCAC  
 CTGTTACAGA GGAAGGCCA AGTGCTGCAA GTGAGCTGGG AGTGACCAGA AGAAATGACG CAGAAGTGAA ATGAACTTTT  
 TATAAGCATT CTTTAAATAA AGGAAAATG CTTTGAAGT AT-3' (FRAG.NO: ) (SEQ. ID NO: 2472)  
 5'-CCGGGGC-3' (FRAG.NO:1800) (SEQ. ID NO: 1811)  
 5'-GG GCCTGCBGGG CC-3' (FRAG.NO:1801) (SEQ. ID NO: 1812)  
 5'-GGCBGCB BGG-3' (FRAG.NO:1802) (SEQ. ID NO: 1813)  
 5'-GGG TCC TCB TGG CTG GGG-3' (FRAG. NO:1212) (SEQ. ID NO:1222)  
 5'-GCC TGG GCC TGC BGG GCC-3' (FRAG. NO:1213) (SEQ. ID NO:1223)  
 5'-GCT CTT GCC TGG BGT GGC TC-3' (FRAG. NO:1214) (SEQ. ID NO:1224)  
 5'-GCC CBG BGT CTT CCC TGG T-3' (FRAG. NO:1215) (SEQ. ID NO:1225)  
 5'-CCGGGGCTGC BGCBCCTCB TCBGCTCTTG CCTGGBTGG CTCBGCCTGG GCCTGCBGGG CCBCCBGGBG BBTGGCBGCB  
 BGGBTGGCB GGGTCTCTBT GGCTGGGGTC BCBGTCCTC TBGCTBGGCB GGGTGBCCBG BGBGGGC-3' (FRAG.NO:1803)  
 (SEQ. ID NO: 1814)

#### Human Defensin 2 Nucelic Acid and Antisense Oligonucleotide Fragments

5'-ATCCTTTAAG TCAATGGACT TTGCATCAGT CACACCATCT TTTGTACTT TGGACTTCCC CAGCTATGTT CAATAATTAC  
 TGTCTTCCC TTGGGCCCCA TTGTAATGCG TACAGCCTCG AAAAAAGTC TACACTTTGA AGCATTAAAG CTCGGACATC  
 AGCACCATAA TTTACATCTT TACCATCACT TCAAGTGAGG TGAGGAGCCA GTAGCCTGGA CACTGGTCTC ATCTGGTGAA  
 AGACTGTGGG TAATGGAAGC ATTTCTGTGG GGTGCTGGCA GGACATGTGC ATGGCGAGGC AGGTCATCAG CAGCAAGTGA  
 GAGCTGCCTC TTACTTTCTA AAGGTGACAT AGCAAATATA CAAAAAATAA TAAATAAATT ATTAATTTAG GTAGAGCACA  
 TAAAGGCTTT ATTTCAATTT CCATTTCTCT GTATGCTTTC TTCACCAGGA AGAAATAGTT TTAGTGTCAG GAATGAATGA  
 GTCTGCCCCC CAATTCCAGC CTGCTCAACA CACAAGGAAA CAAAGCCCTG ACAATCAGAG TGACTCCCTG GTGACTAAGC  
 TCCAGTCTCT GGATGCATAT TTGTTAGCA GTTCTGACAG CATTTGACCC AGCCCTCTCT CTGCATATCC CATCAGAACC  
 TTCTTTTTTT TTTTTTCTT TGAGACTGAG TCTTGCTCTG TCGGAAGCGA CTCTGTGCC TCAGCCTCCC AAATACCTGG  
 AATTATAGGC GTAAGCCATC ATGCTGGCT AATTTTGTGA TTTTTCATGG AGATGGGGT TTGCCATGTT GGTCAAATG  
 GTCTCAGACT CCTGACCTCA TGTGATCCAC CTGCTCAGC CTCCCAAACCT GCTGGGATGA CAGGTGTAAG CCACCATGCT  
 AGGCTCAGAA ATTTCTTTT ATAAAAATGT CATTAAAGGAT CTTGGCTGCA CAATATCGTT ACCAGCTTCC TTAAATCCA  
 CTCTGGCCT GCCAGGAATC AGGTTCTTCA GAACCTGACA TTTAAATGA AGAGGTCAGG CAGTTCATGA GGAAAGCCTC  
 ATGTCCCA TGTCTGTGC ACTGCTGAC CCCTGAGACA TCACAGACAT GGACACTGGG GCCTGCTGT TTCTCAAACCT  
 GCCCTTAGAT CGAAAGAGGG AGGAACCAGG ATGAATGCCA CTCATTTTCC CAAGAAAGGC CCTCTCTGA GTGCCGGGA  
 TGGGGCTCTG TCCATTGCTT GGGGCCGCA ATTGCTACT TGGTTACCG AGGAAGGACA GGGTCTGAG AGACACGGA  
 GAGCTCACAC AGCCCTGAAA ACATGGGGCT CTTTCATAAG TGTTTCCAT CACCAACAGG GAGACCAGT GGAGCCCTTG  
 CAGCCCCACT CGGTGCTTCT CCACCAAATC CCAAGGGCAG TGACGCTGAC GTCTGTGGA AGCAGAGAAA GCCTGGCTC  
 CCAAAGCCT GAAGTCCCTG TGGAGCTGAC ATTCCTGAG TGACGGTGTG AATGGAAGGA ACTCAAGTGC GGGTGGTAGG  
 CCACCTCTG GCCCAGGCTT GGTGAATC TGAGGGGACA CATGTAGTCA CAATCCATC CTCCATTCT CTTCTCAGA  
 GGAAGGAAGT GGGCATCCAT CTGCTCATC TCTCTCCCT GGGGAAGATG GGGAGTTTCA GGGGAACCTT CACATAAAT  
 TCACGAGCT AGATCTCTG TGAGGATGGG GCCCACCATG CTCCCGTGC TGCCAGAGGC CCTGAGCCCC TCCAGGGTC  
 CCTGGGTTG AGCCAGCCCT GTATCAGTCC CAGGAGTGA ATGAGTGA ATTAGATGA AATGAGTGA AAGAGCTCTC  
 AATTGACCT GAGACTGTCC CCAGATACTC AGGAAAAACA GGACGTCGCA CAGAGTGGGC AGCAGGTGAG TGGCAGGTTA  
 TAGGTCTGA GTTTGAGTTT GTTCTACGT GAGACAGACC CAGCCCTCA CTCCATTAC AACTGGGT TAAATGGTG  
 CAAGATAGGA GCAATTTTCT GGTCCCAAGA GCAGGAGGAA GGGATTTTCT GGGGTTCTCT GAGTCCAGAT TTGCATAAGA  
 TCTCTGAGT GTGCATTGTT CTTTGAGGAC CATTCTCTGA CTCACCAGT AAGTGGCTGA ATTCTAACCT CTGTAATGAG  
 CATTGCACCC AATACCAGT CTGAATCTA CTTGGTGACC AGGGACCAGG ACCTTTATAA GGTGGAAGGC TTGATGCTC  
 CCCGAGCTC AGCTCCTGGT GAAGCTCCCA GCCATCAGC ATGAGGTCT TGTATCTCT CTCTCGTTC CTCTCATAT  
 TCTGATGCC TCTTCCAGGT GAGATGGGCC AGGGAATAG GAGGGTTGGC CAAATGGAAG AATGGCGTAG AAGTTCTCTG  
 TCTCTCTCA TCCCTTCCA CCTATCTCTC CCTCATCCCT CTCTCTCTT CTCTCTCTG TGTGTCCCT CCATCTTTT  
 CTCTGCTC TCTCTTCT TCCCTCTCTC TCTTTTCT GTCTTCTT TTCTCTCTC CTAGAGCAT GTCTTCTT  
 CTCTCTT CTCTTCTT ACCCACAT TTAGACTGAA TGCCCTATT AATTGAACAA AGCATTGCTT CTTCAATAG  
 AAAAGGAGT TGAGAACCCA ATGGACACCT CACTGTTCT TCTAAGCCAA TATGAAGGAG CCCAGTAGCT TGAAATATC  
 ATCTCTTCT TGTCTTCT GCTACAAGT CTGAGACTAT GGTGAAACC TGTTAGGTGA CTTTAAAT AAAAGCAGA  
 AATTTGATT TTATCTAAG AAGTAGTAT AGAATGTCAT TTCTAAAT TTATATTA AAGGTGAGAT ACTGCAACCT  
 AGAGAATTCC AGATAATCTT AAGGCCAGC CTATACTGTG AGAACTACTG CAGCAAGACA CTCTGCCTCC AGGACTTTT  
 TGATCAGAGG CCTGAGAAC AGTCCCTGCC ACTAGGCCAC TGCAGGTCA CAGGACAGG TACAGCCAT TGAAACCTAC  
 TTTAAACCT GGATGCCATA CCTTCATTT CTCCTTGATA TTATGAAAT AAAATAAAAA CCATGAAAGG ATAAAGAGG  
 GAGAGTGGA GGAAGGATG GAGAAAGGGA AAAAGAAAAT TTGAGAGTAA ATCTAAAAA AATTAATCTA ATAGATATCA  
 TCTGTGAA TCCTCATTTT ACCAATCTTA TTTATGAGT CTGGGTTTG TGAGAACA GGGGTTCTGA AGGCACCAG  
 AGACCTCATG TTTTCAAAA CTTAGAACAG TATAATGAAG GAAGGCGGG AGGCAGGAG GCAGGGAGG AGGGAGGAG  
 GGAGGCGGC AGGTGGGGAG GGAGGGACG AAGGAGGAG GGAGGGAGG AGGGAGGAG GGAGGGATAA  
 AAAAGAAGA ATGAGGTTGA AACCAGGACT TAGATATTAG AAACAAGCCA TTACAAAAT TATTTCTATG GTTAATTGTG  
 GTTTTCACT GTAAGTACT TGGTGTTAAT TTCTATTAA ACAATTTAG TAAGTGCAT CTTTATATCC CATCTCAGT  
 CAAATACTTA ACAGACTAAA TGATTTGAAA AAGCAAAAGT TACTGGCTT GTGTGTGTTA AAATGGAGGT ATGGTGGCTT  
 TGATATTAT TCTTGTGGT GGAGCTGAAT TCACAAGAGA TCGTTGCTGA GCTCTACCA GACCCACCT GGAGGCCCA  
 GTCACTCAGG AGAGATCAGG GTCTTTCACA ATCAGGTCTT ACAAATAA ACATCCCCC AACCACAGCA GTGCCAGTT  
 CCATGTCAGA AACTTAGATC CAAATGACTG ATCCGCTCT CATTATCATG ATGAAAAAGC CAGGCTTGA GAAAGAAGCC  
 CGCTGCGGAT TACTCAAGG CGATACTGAC ACAGGGTTTG TGTTTTCCA ACATGAGTTT TGAGTTCTTA CACGCTGTTT  
 GCTCTTTTG TGTGTTTTT CCCTGTAGG TGTTTTGGT GGTATAGGC ATCTGTATC CTGCTTAAAG AGTGGAGCCA  
 TATGTCATCC AGTCTTTG CTTAGAAGG ATAAACAAAT TGGCACCTGT GGTCTCCTG GAACAAAATG CTGAAAAAG  
 CCATGAGGAG GCAAGAAGC TGCTGTGGCT GATGCGGATT CAGAAAGGGC TCCTCATCA GAGACGTGCG ACATGTAAC  
 CAAATTAAC TATGGTGTCC AAAGATACGC AATCTTATC CTAGTAATTG TGGTCATTGG GTGATGTTG TTTGGGAGG  
 CCATCTCTAA TATCTTGAA ACACCTTTT CTGCTCTCCA GGAAGGGTC AGGGCTGCCA CAGCGGGCT TGGAGTGCTT

TCCAGGGTCA CAGGCATCTG TATTCTTTGG ATTCTTGAC CTTCCTTATT TATTCCTGAC ATTTCTCTAA AACGTGTGCT  
TTGCTCCTCC TGCATCTCC CTTTGCATGC CTCACCTAC CCCACATCTT CCCTAAAAAA AGCAAGCCCA ACTCAAAGAC  
CAGTTCCCTC ATGGAATCAT AGTGGATCTG CCAAGGGAGG GGATGCCAG TCCTCTGTC TFCACAAGAC TCCCTCTTC  
TGGCTAAGGT TTCTTATGCA ATTAT GAATTCACAT TTCTCACCTT TTGATGTATT AAGAAAGTAT GGAGAAATAT  
ATCTCTATC AAATTTTCAT GCCTTCAATA ATTTCTAATT CATCAGTCAG TGTTTTCCA TCCTTTACTG TGATGATGCC  
CTTTCTTCCA AACTTTTTC TGCATCAGA GATGATGTTA CCAATTTCTT TGCTCCATT TGCAGAAATT GTAGCAACCT  
GTGCAATTTT TCCAGGTTG GTCACAGGT TAGACTGCTT TTTAAGTTCA GCAATTACAG CATCAACAGC TAACATCACA  
CCTCTCTGA TTCCACTGG ATTAGACCT TTGCTAACCT TCTGGAAGGC TTATTTGGAA ATAGAGCATA CCAGTACAGC  
AGCAGTGATA GTGCCATCCC CCAGTCTCTC CATTTGTGTT ATTGGCAACA TCTGGACAA GTTTAGCTCC AATGCTTTTA  
TATTTATCTT TAAAGTCAAT TGACTTTGCA TCAGTCACAC CATCTTTGT TACTTTGGGA CTTCCTCCAGC TATGTTCAAT  
AATTACTGTT CTTCCTTTG GCCCATTGT ATGGCTACA GCATCGACAA AAAGTCTACA CTTTGAAGCA TTAAGGCTCA  
GACATCAGCA CCAAATTTA CATCTTACC AATGCTCAA GTGAGGTGAG GAGCCAGAT CTGTGACAT GGTCTCATCT  
GGTGAAAGAC TGTGGTAAT GGAAGCATT CTGTGGGGTG GTGGCAGGAC ATGTGCATGG TGAGGAGGT CATCAGCAGC  
AAGTGAGAGC TGCCTCTAC TTCTAAAGG TGACATAGCA AGTATACAAA AAAAAATAAA ATATTAATTT AGGCAGAGCA  
CATAAAGGCT TTATTTTATA TTCCATTTCT CTGTATGCTT TCTTCACCAG GAAGAAATAG TTTAGTGTG AGGAATGAAT  
GAGTCTGCC CTCAATTCCA GCCTGCTCAG CACACAAGGA ACAAAGGCC TGACAATCAG AGTGACTCCC TGGTGACTAA  
GCTCCAGTCC TGGATGCATA TTGTTTATG AGTCTGACA GCATCTGACC CAGCCCTCTC TTGTCATACC CCACCAGAAC  
CTTCTTTTTT TTTTTTTT TTTGAGACTG AGTCTGCTC TGTGGAAGC GATTCCGCTG CCTGAGCTC CCAAATACCT  
GGAATTATAG GCGTAAGCCA TCATGCCTGG CTAATTTTGT TATTTTTCAT GGAGATGGGG TTTTGCCATG TTGGTCAAT  
TGGTCTACA CTCTGACCT CATGTGATCC ACCTGCCTCA GCCTCCCAA GTGCTGGGAT GACAGGTGTA AGCCACCATG  
CTAGGCTCAG AAATTTCTT TTATAAAAAAT GTCAATTAAGG ATCTTGGCTG CACAATATCG TTACCAGCTT CCTTTAAATC  
CACCTTGCC CTGCCAGGAA TCAGGGTTCT TCAGAACCTG ACATTTTAAA TGAAGAGGTG AGGCAGGTCA TGAGGAAAGC  
CTCATGTCC CCAATGCTCT GTCAGTCTG CACCCTGAG ACATCACA GATGGACAT GGGGCTGTCT TGTCTCTCAA  
ACTGCCCTTA GATCGAAAGA GGGAGGAACC AGGATGAATG CCACTCATTT TCCCAAGAAA GGCCCTCTCC TGAGTGCCCG  
GGATGGGGCT CTGTCCATTG CTGGGGCCG CCAATTGCTA CTCTGGGTTA CGGAAGAAGG ACAGGGTCTC GAGAGACACC  
AGAGACCTCA CACAGCCTG AAAACATGGG GTCCTTCAT AAGTGTTC CATCACCAAC AGGAGAGCCA CGTGGAGGCC  
TTGACGCCCT ACTCGGTGCT TCTCCACCAA ATCCCAAGGG CAGTGACGCT GACGTCTGTG GAAAGCAGAG AAAGCCCTGG  
CTCCCAAAGC CTTGAAGTCC TGTGGAGCTG ACATTCCCTG AGTGACGGTG TGAATGGAAG GAACTCAAGT GCGGGTGGTA  
GGCCACCTCC TGGCCAGGC CTGGGTGAAC TCTGAGGGGA CACATGTAGT CACAATCCCA TCCTCCCAT CTCTCTCA  
GAGGAAGGAA GTGGGCATCC ATCTGCCTCA TCTCTCTCC TGTGGGAAGA TGGGGAGTT CAGGGGAAT TCCATATAAA  
TTTACCAGC TCAGATCTCC TGTGAGGATG GGGCCACCA TGCTCCCGT GCTGCCAGAG GCCTGAGCC CCTCAGGGT  
CCCTGGGTTT GAGCCAGCCC TGATCATCC CCAGGAGCTG AATGTCCGAA CAATGGATAG AATTAGATGG AAAGAGCTCT  
CAATTTGGCC TGAGACTGTC CCCAGATACT CAGGAAAAAC AGGACGTGCG ACAGAGTGGG CAGCAGGTGA GTGGCAGGT  
ATAGTCTCTG AGTTTGAGTT TGTCTCACG TGAGACAGAC CCAGCCCTC ACTCCATTCA CACACTGGGT TTTAAATGGT  
GCAAGATAGG AGGAATTTT TGTCCCAAG AGCAGGAGGA AGGGATTTT TGGGGTTTCC TGAGTCCAGA TTTGCATAAG  
ATCTCTGAG TGTGCATTGT TCTTTGAGGA CCATTCTCTG ACTCACCAG TAAGTGGCTG AATTTCTAAC TCTGTAATGA  
GCATTGCACC CAATACCAGT TCTGAATCT ACCTGGTGAC CAGGGACCAG GACCTTTATA AGTGGAAGG CTGTAGTCC  
TCCCAAGACT CAGTCTCTG TGAAGTCCC AGCCATCAGC CATGAGGGTC TTGTATCTCC TCTCTCGTT CCTCTCATA  
TTCTGATGC CTCTCCAGG TGAGATGGG CAGGGAAATA GGAGGGTTGG CCAAATGGAA GAATGGCGTA GAAGTCTCT  
GTCTCTCTC ATTCCCTCC ACCTATCTCT CCTCATCCC TCTCTCTCT TCTCTCTCT GTGTGTCCC TCCATCTTT  
TCTCTGCTT CTCTCTCT TCCCTCTCT CTCTTTTTT CTGTCTTCT TTTCTCTCT TCCCTAGAGC ATGTCTTCT  
TTCTTCTCT TTCTTTCT CTACCCACAC TTTAGACTG AGTAGACTGA ATGCCCTAT TAATTGAACC AAGCATGTCT  
TCCTTCAATA GAAAAGGAGT TTGAGAACC AATGGACAAC TCACTCGTT TCTTAAGCCA ATATGAAGGA GCCCAGTAGT  
TTGTAAATAT CATCTCTCA CTGCTTTCCA TGCTACAACT GCTGAGACTA TGGTTGAAAC CTGTTAGGTG ACTTTTAA  
TAAAAGGCAG AAATTTTGT TTTATCTAAA GAAAGTAGTA TAGAATGTCA TTTTCTAAAT TTTTATATT AAAGAGTAGA  
TACTGCAACC TAGAGAATC CAGATAATCT TAAGGCCAG CCTATACTGT GAGAACTACT GCAGCAGACA CTCTGCCCC  
AGGACTTTT TGATCAGAG CCCTGAGAAC AGTCCCTGCC ACTAGGCCAC TGCAGGTTCA CAGGACAGGG ACAGCCCAT  
GAAACCACT TTTAAACCTG GATGCCAAC CTTCATTTT CTCTGTAT TATGAAAATA AAATAAAAA CATGAAGGA  
TAAAAGAGG AGAGTGAAG GGAAGGATGG AGAAAGGGA AAAGAAAT TGAGAGTAAA TGTAAACAA  
ATTAATCTAA TAGATATCAT CTGTGAAAT CCTCATTTA CCAATCTTAT TTATGAGTCC TGGGTTTGT GAGAACAAATG  
GGGTCTGAG AGGCACCAGA GACCTCATAT TTCCAAAAC CTAGAACAGT ATAATGAAGG AAGGAGGGA GGAGGGAGGG  
AGGGAGGGA GGAGGGAAG AGGGAGGGAG GGAGGGAAC AAAAAAGA ATGAGGTTGA AACCAGGACT  
TAGATATTAG AAACAAGCCA TTACAAAATT TATTTCTATG GTTAATTGTG GTTTTCACT GTAAGTACT TGGTGTAAAT  
TTCTATTAA ACAATTCAG TAAGTTGCAT CTTTCTATC CCATCTCAGA TCAAATACT AACAGACTAA ATGATTGAA  
AAAGCAAAAG TTTACTGGCT TGTGTGTGT AAAATGGAGG TATGGTGGCT TTGATATTAT CTCTTGTGG TGGAGCTGAA  
TTCACAAGAG ATCGTTGCTG AGCTCCTGCC AGACCCACC TGGAGGCCAG AGTCACTCAG GAGAGATCAG GGTCTTTCAC  
AATCAGGTT TACAAAAATA AACATCCCC AAACCACAGC AGTGCCAGT TCCATGTCAG AAATTAGAT CCAAATGACT  
GACTCGCTC TCATTATCAT GATGGAAAAG CCCAGGCTG AGAAAGAAGC CCGTCTCGGA TTTACTCAAG GCGATACTGA  
CACAGGGTTT GTGTTTTTCC AACATGAGTT TTGAGTTCT ACACGCTGTT TGCTCTTTT GTGTGTTTT TCCCTGTTAG  
GTGTTTTTGG TGGTATAGG GATCCTGTTA CTGCCTTAA GAGTGGAGCC ATATGTCATC CAGTCTTTG CCCTAGAAGG  
TATAAACAAA TTGGCACCTG TGGTCTCCCT GGAACAAAAT GCTGCAAAA GGCATGAGGA GGCCAGAAGG CTGTGTGGC  
TGATGCGGAT TCAGAAAGG CTCCCTCATC AGAGACGTGC GACATGTAAA CCAAATTAAT CTATGGTGTC CAAAGATACG  
CAATCTTTAT CTAAGTAAT GTGGTCATTG GGTGATGTT GTTTGGGCAG GCCATCTCTA ATATCTTGA AACACCTTT  
TCTGCTCTCC AGGAAGGGGT CAGGGCTGCC ACAGCGGGG TGGAGTGC-3' (FRAG. NO: ) (SEQ. ID NO:2473)

5'-GAATTCACAT TTCTCACCTT TGATGTATT AAGAAAGTAT GGAGAAATAT ATCTCTATC AAATTTTCAT GCCTTCAATA  
ATTCTAATT CATCAGTCAG TGTTTTCCA TCCTTACTG TGATGATGCC CTTTCTTCCA AACTTTTTC TGCATCAGA  
GATGATGTTA CCAATTTCTT TGTCTCCATT TGCACAATT GTGCAACCT GTGCAATTT TCCAGGTTG GTCACAGGT  
TAGACTGCTT TTTAAGTTCA GCAATTACAG CATCAACAGC TAACATCACA CCTCTTGA TTTCCACTGG ATTAGACCT  
TTGCTAACCT TCTGGAAGGC TTATTTGGAA ATAGAGCATA CCAGTACAGC AGCAGTGATA GTGCCATCCC CCAGTCTCTC

CATTTGTGTT ATTGGCAACA TCTTGGACAA GTTTAGCTCC AATGCTTTTA TATTTATCCT TTAAGTCAAT TGACTTTGCA  
TCAGTCACAC CATCTTTTGT TACTTTGGGA CTTCGCCAGC TATGTTCAAT AATTACTGTT CTTCCTTTTG GCCCATTGT  
AATGGCTACA GCATCGACAA AAAGTCTACA CTTTGAAGCA TTAAGGCTCA GACATCAGCA CCAAATTTTA CATCTTTACC  
ATCACTTCAA GTGAGGTGAG GAGCCAGTAG CCTGGACACT GGTCTCATCT GGTGAAAGAC TGTGGGTAAT GGAAGCATT  
CTGTGGGGTG GTGGCAGGAC ATGTGCATGG TGAGGACAGT CATCAGCAGC AAGTGAGAGC GGCCTCTTAC TTCTAAAGG  
TGACATAGCA AGTATACAAA AAAAAATAAA ATATTAATTT ATGCAGAGCA CATAAAGGCT TTATTTTATA TTCCATTCT  
CTGTATGCTT TCTTACCAG GAAGAAATAG TTTTAGTGTC AGGAATGAAT GAGTCTGCCC CTCAATTCCA GCCTGCTCAG  
CACACAAGGA ACAAAGCCC TGACAATCAG AGTGACTCCC TGGTGACTAA GCTCCAGTCC TGGATGCATA TTTGTTTAGC  
AGTTCTGACA GCATCTGACC CAGCCCTCTC TTTGCATACC CCACCAGAAC CTCTTTTTT TTTTTTTTC TTTGAGACTG  
AGTCTTGCTC TGTCGGAAGC GATTCCCGTG CCTCAGCCTC CCAAATACCT GGAATTATAG GCGTAAGCCA TCATGCCTGG  
CTAATTTTGT TATTTTTCAT GGAGATGGGG TTTTGCCATG TTGGTCAAT TGGTCTCACA CTCCTGACCT CATGTGATCC  
ACCTGCCTCA GCCTCCCAA GTGCTGGGAT GACAGGTGTA AGCCACCATG CTAGGCTCAG AAATTTCTT TTATAAAAT  
GTCATTAAGG ATCTTGGCTG CACAATATCG TTACCAGCTT CCTTAAATC CACCTCTGGC CTGCCAGGAA TCAGGGTTCT  
TCAGAACCTG ACATTTTAAA TGAAGAGGTC AGGCAGGTCA TGAGGAAAGC CTCATTGTCC CCATGTCTCT GTCAGTCTG  
CACCCCTGAG ACATCAGAGA CATGGACACT GGGGCTGCT TGTCTCTCAA ACTGCCCTTA GATCGAAAGA GGGAGGAACC  
AGGATGAATG CCACTCATTT TCCCAAGAAA GGCCCTCTCC TGAGTGCCCG GGATGGGGCT CTGTCCATTG CCTGGGGCCG  
CCAATTGCTA CTCTGGGTTA CGGAAGAAGG ACAGGGTCTC GAGAGACACC AGAGACCTCA CACAGCCCTG AAAACATGGG  
GCTCCTTCAT AAGTGTTCCT CATCAACCAAC AGGGAGCCA CGTGGAGGCC TTGCAGCCCT ACTCGGTGCT TCTCCACCAA  
ATCCCAAGGG CAGTGACGCT GACGTCTGTG GAAAGCAGAG AAAGCCCTGG CTCCCAAAGC CCTGAAGTCC TGTGGAGCTG  
ACATTCCCTG AGTGACGGTG TGAATGGAAG GAACTCAAGT GCGGGTGGTA GGCCACCTCC TGGCCAGGC CTGGGTGAAC  
TCTGAGGGGA CACATGTAGT CACAATCCCA TCCTCCCAT CTCTTCTCA GAGGAAGGAA GTGGGCATCC ATCTGCCTCA  
TCTCTCTCC GTGGGGAAGA TGGGGAGTTT CAGGGGAAC TACACATAAA TTACACCAGC TCAGATCTCC TGTGAGGATG  
GGGCCCACCA TGCTCCCGT GCTGCCAGAG GCCCTGAGCC CCTCCAGGT CCTGGGTTT GAGCCAGCCC TGTATCATCC  
CCAGGACCTA AATGTCCGAA CAATGGATAG AATTAGATGG AAAGAGCTCT CAATTTGGCC TGAGACTCTC CCCAGTACT  
CAGGAAAAAC AGGACGTGCG ACAGAGTGGG CAGCAGGTGA GTGGCAGGT ATAGGTCTCT AGTTTGAGTT TGTCTCACG  
TGAGACAGAC CCAGCCCTC ACTCCATTCA CACACTGGGT TTTAAATGGT GCAAGATAGG AGGAATTTTC TGGTCCCAAG  
AGCAGGAGGA AGGGATTTTC TGGGGTTTCC TGAGTCCAGA TTTGCATAAG ATCTCTGAG TGTGCATTGT TCTTTGAGGA  
CCATTCTCTG ACTCACCAGG TAAGTGGCTG AATTCTAACC TCTGTAATGA GCATTGCACC CAATACCAGT TCTGAACCT  
ACCTGGTGAC CAGGGACCAG GACCTTTATA AGGTGGAAGG CTGTGATGCC TCCCAGACT CAGCTCCTGG TGAAGCTCCC  
AGCCATCAG CATGAGGGTC TTGTATCTCC TCTCTCGT CTCTTCTATA TTCTGATGC CTCTTCCAGG TGAGATGGG  
CAGGGAATAA GGAGGGTTGG CCAATGGAA GAATGGCGTA GAAGTCTCT GTCTCTCTC ATCCCTCTC ACCTATCTCT  
CCCTCATCCC TCTCTCTCT TCTCTCTCT GTGTGTCCCC TCCATCCTT TCTCTGCTT CTCTCTCTC TTCCCTCTCT  
CTCTTTTTT CTGTCTTCT TTTCTCTCT TCCCTAGAGC ATGTCTTCT TTCTTCTCT TTCTTCTCT CTACCCACAC  
TTTTAGACTG AGTAGACTGA ATGCCCTATT TAATTGAACC AAGCATTGCT TCCTTCAATA GAAAGGAGT TTAGAACCC  
AATGGACAAC TCACTCGTTC TTCTAAGCCA ATATGAAGGA GCCCAGTAGT TTGTAAATAT CATCTCTTCA CTGCTTTCCA  
TGCTACAAT GCTGAGACTA TGGTTGAAAC CTGTAGGTG ACTTTTTAAA TAAAGGCCAG AAATTTTGT TTTATCTAAA  
GAAAGTAGTA TAGAATGTCA TTTTCTAAAT TTTATATTT AAAGAGTAGA TACTGCAACC TAGAGAAATC CAGATACTCT  
TAAGGCCAG CCTATACTGT GAGAACTACT GCAGCAGACA CTCTGCCCC AGGACTTTTC TGATCAGAGG CCTGAGAAC  
AGTCCCTGCC ACTAGGCCAC TGCAGGTCA CAGGACAGG ACAGCCCAT GAAACCAACT TTTAAACCTG GATGCCTAAC  
CTTCATTTTC TCCTTGATAT TATGAAAAA AAATAAAAA CATGAAAGGA TAAAGAGGG AGAGTGGAAG GGAAGGATGG  
AGAAAGGGAA AAAGAAAATT TGAGAGTAAA TCCTAAAAA ATTAATCTAA TAGATATCAT CTGTGAAAT CCTCATTTA  
CCAATCTTAT TTATAGTCC TGGGTTTTGT GAGAACAATG GGGTCTGAG AGGCACCAGA GACCTCATAT TTCCAAAAA  
CTAGAACAGT ATAATGAAGG AAGGAGGAA GGAGGGAGG AGGGAGGAA GGAGGAAAG AGGGAGGAG  
GGAGGGAAAC AAAAGAAGA ATGAGGTTGA AACCAGGACT TAGATATTAG AAACAAGCCA TTACAAAATT TATTTCTATG  
GTAAATTGTG GTTTCAACT GTAAGTTACT TGGTGTAAT TTCCTATTAA ACAATTTAG TAAGTTGCAT CTTTTTATC  
CCATCTCAGA TCAAATACTT AACAGACTAA ATGATTGAA AAAGCAAAAG TTTACTGGCT TGTGTGTGTT AAAATGGAGG  
TATGGTGGCT TTGATATTAT CTCTTGTGG TGGAGCTGAA TTCACAAGAG ATCGTTGCTG AGCTCCTGCC AGACCCACC  
TGGAGGCCCT AGTCACTCAG GAGAGATCAG GGTCTTTCAT AATCAGGTTT TACAAAAA AATATCCCC AAACACAGC  
ATGCCCAGT TCCATGTCAG AAACCTAGT CCAATGACT GACTCGGTC TCATTATCAT GATGGAAAG CCCAGGCTTG  
AGAAAGAAGC CCGCTGCGGA TTTACTCAAG GCATATCTGA CACAGGGTT GTGTTTTCC AACATGAGTT TTGAGTCTT  
ACACGCTGTT TGCTTTTTT GTGTGTTTT TCCCTGTTAG GTGTTTTGG TGGTATAGG GATCCTGTTA CTGCCTTAA  
GAGTGGAGCC ATATGTCATC CAGTCTTTG CCTAGAAGG TATAACAAA TTGGCACCTG TGGTCTCCCT GGAACAAAAT  
GCTGCAAAA GGCATGAGGA GGCCAAGAAG CTGCTGTGGC TGATCGGGAT TCAGAAAGGG CTCCCTCATC AGAGACGTGC  
GACATGTAAA CCAAATTAAT CTATGGTGT CAAAGATACG CAATCTTTAT CCTAGTAATT GTGGTCATTG GGTGATGTTG  
GTTTGGGCA GCCATCTCTA ATATCCTTGA AACACCTTT TCTGCTCTC AGGAAGGGT CAGGGCTGCC ACAGCGGGC  
TTGGAGTGC-3' (FRAG. NO: ) (SEQ. ID NO:2476)

5'-ATCCTTTAAG TCAATGGACT TTGCATCAGT CACACCATCT TTTGTTACTT TGGACTTCCC CAGCTATGTT CAATAATTAC  
TGTTCTTCCC TGGGCCCCA TTGTAATGGC TACAGCCTCG AAAAAAGTC TACACTTTGA AGCATTAAGG CTCGGACATC  
AGCACCAAT TTACATCTT TACCATCACT TCAAGTGAGG TGAGGAGCCA TAGCCTGGA CACTGGTCTC ATCTGGTGAA  
AGACTGTGGG TAATGGAAGC ATTTCTGTGG GGTGCTGGCA GGACATGTGC ATGGCGAGGC AGGTCATCAG CAGCAAGTGA  
GAGCTGCCTC TTACTTTCTA AAGGTGACAT AGCAATATA CAAAAAATA TAAATAAAT ATTAATTTAG GTAGAGCACA  
TAAAGGCTTT ATTTCATATT CCATTTCTCT GTATGCTTTC TTCACCAGGA AGAAATAGTT TTAGTCTCAG GATGAATGA  
GTCTGCCCT CAATTCCAGC CTGCTCAACA CACAAGGAAA CAAAGCCCTG ACAATCAGAG TGAATCCCTG GTGACTAAGC  
TCCAGTCTCT GGATGCATAT TTGTTAGCA GTTCTGACAG CATTTGACCC AGCCCTCTCT CTGCATATCC CATCAGAAC  
TTCTTTTTT TTTTTTCTT TGAGACTGAG TCTGTCTCTG TCGGAAGCGA CTCCTGTGCC TCAGCCTCCC AAATACCTGG  
AATTATAGGC GTAAGCCATC ATGCTGGCT AATTTTGTG TTTTTCATGG AGATGGGGTT TTGCCATGTT GGTCAAATG  
GTCTCACACT CTGACCTCA TGTGATCCAC CTGCTCAGC CTCCAAACT GCTGGGATGA CAGGTGTAAG CCACCATGCT  
AGGCTCAGAA ATTTCTTTT ATAAAAATGT CATTAAGGAT CTGGCTGCA CAATATCGTT ACCAGCTTCC TTTAAATCCA  
CTTCTGGCT GCCAGGAATC AGGTTCTTCA GAACCTGACA TTTAAATGA AGAGGTCAGG CAGTTCTATGA GGAAGCCTC



ATTGTCCTCA TGTCTCTGTC ACTGCTGCAC CCCTGAGACA TCACAGACAT GGACACTGGG GCCTGCTTGT TTCTCAAACCT  
GCCCTTAGAT CGAAAGAGGG AGGAACCAGG ATGAATGCCA CTCATTTTCC CAAGAAAGGC CCTCTCCTGA GTGCCCGGGA  
TGGGGCTCTG TCCATTGCCT GGGGCCGCCA ATTGCTACTC TGGGTACGG AGGAAGGACA GGGTCCTGAG AGACACCAGA  
GACCTCACAC AGCCCTGAAA ACATGGGGCT CTTTCATAAG TGTTCCTCAT CACCAACAGG GAGACCACGT GGAGGCCTTG  
CAGCCCACT CCGTGTCTCT CCACCAATC CCAAGGGCAG TGACGCTGAC GTCTGTGGAA AGCAGAGAAA GCCCTGGCTC  
CCAAAGCCCT GAAGTCCCTG TGGAGCTGAC ATTCCTGAG TGACGGTGTG AATGGAAGGA ACTCAAGTGC GGGTGGTAGG  
CCACCTCTG GCCCAGGCCT GGGTGAATC TGAGGGGACA CATGTAGTCA CAATCCCATC CTCCATTCT CTTTCTCAGA  
GGAAGGAAGT GGGCATCCAT CTGCTCATC TCTCTCCGT GGGGAAGATG GGGAGTTTCA GGGGAACCTT CACATAAATT  
TCACCAGCTC AGATCTCCTG TGAGGATGGG GCCCACCATG CTCCCGGTGC TGCCAGAGGC CTGAGCCCC TCCCAGGGTC  
CCTGGGTTTG AGCCAGCCCT GTATCATCCC CAGGAGCTGA ATGTCAGAGC AATGGATAGA ATTAGATGGA AAGAGCTCTC  
AATTGACCT GAGTAGTTC CCAGACTCTC AGGAAAAACA GGACCTCGCA CAGAGTGGGC AGCAGGTGAG TGGCAGGTGA  
TAGGTCTGA GTTGTAGTTT GTTCTACGT GAGACAGACC CAGCCCTCA CTCCATTAC ACTGTGGTT TTAATGGTG  
CAAGATAGGA GCAATTTTCT GGTCCCAAGA GCAGGAGGAA GGGATTTTCT GGGGTTTCT GAGTCCAGAT TTGATAAGA  
TCTCTGAGT GTGCATTGTT CTTGAGGAC CATTCTCTGA CTCACCAGGT AAGTGGCTGA ATTCTAACCT CTGTAATGAG  
CATTCACCC AATACCAGTT CTGAATCTA CTGGTGACC AGGGACCAGG ACCTTTATAA GGTGGAAGGC TTGATGCTCT  
CCCCAGACTC AGTCTCTGGT GAAGCTCCCA GCCATCAGCC ATGAGGGTCT TGTATCTCCT CTCTCGTTC CTCTTCATAT  
TCTGTATGCC TCTTCCAGT GAGATGGGCC AGGGAATAG GAGGGTTGGC CAAATGGAAG AATGGCGTAG AAGTTCTCTG  
TCTCTCTCA TTCCCTCCA CTTATCTCTC CTTCTCTCT CTCTCTCTG TGTGTCCCT CCATCCTTTT  
CTCTGCTTC TCTCTCTCT TCCCTCTCTC TCTTTTCTT GTCTTTCTT TTCTCTCTC CTTAGAGCAT GTCTTTCTT  
CTTTCTTTT CTTTCTTCT ACCCACACTT TTAGACTGAA TGCCCTATTT AATTGAACAA AGCATTGCTT CTTCAATAG  
AAAAGGAGTT TGAGAACCCA ATGGACACT CACTCGTCT TCTAAGCCAA TATGAAGGAG CCCAGTAGCT TGTAATATC  
ATCTCTTAC TGCTTTCCAT GCTACAACTG CTGAGACTAT GGTGAAAACC TGTTAGGTGA CTTTTAAAT AAAAGGCAGA  
AATTTGATT TTATCTAAAG AAAGTAGTAT AGAATGTAT TTTCTAAAT TTTATATTA AAGGTAGAT ACTGCAACCT  
AGAGAATTC AGATAACTT AAGGCCAGC CTACTCTGT AGAAGTCTG CAGCAAGACA CTCTGCCCTC AGGACTTTT  
TGATCAGAGG CCCTGAGAAC AGTCCCTGCC ACTAGGCCAC TGACGGTTCA CAGGACAGG TACAGCCAT GTCTTTCTT  
TTTTAACTT GGATGCTAA CTTTCATTT CTCTTGATA TTATGAAAT AAAATAAAAA CCATGAAAGG ATAAAGAGG  
GAGAGTGAA GGAAGGATG GAGAAAGGA AAAAGAAAT TTGAGAGTAA ATCTAAAAA AATTAATCTA ATAGATATCA  
TCTGTGAAA TCCTCATTTT ACCAATCTTA TTTATGAGTC CTGGGTTTG TGAGAACAAT GGGGTTCTGA GAGGCACCAG  
AGACCTCATG TTTTCAAAA CTTAGAACAG TATAATGAAG GAAGGCGGGG AGGCAGGGAG GCAGGGAGGC AGGGAGGCAG  
GGAGGCGGGC AGGTGGGGG GAGGGACGG AAGGAGGGG GGAGGGAGG AGGGAGGGG GGAGGGATAA  
AAAAAGAAGA ATGAGGTGA AACCAAGACT TAGATATTAG AAACAAGCCA TTACAAAAAT TATTTCTATG GTTAATTGTG  
GTTTTCACT GTAAGTTACT TGGTGTAAAT TTCTATTAA ACAATTTTCA TAAGTTGCAT CTTTTTATCC CATCTCAGGT  
CAATACTTA ACAGACTAAA TGATTTGAAA AAGCAAAAGT TACTGGCTT GTGTGTGTTA AAATGGAGGT ATGGTGGCTT  
TGATATTATC TTCTGTGGT GGAGCTGAAT TCACAAGAGA TCGTGTCTGA GCTCCTACCA GACCCACCT GGAGGCCCA  
GTCACCTAGG AGAGATCAGG GTCTTTCACA ATCAGGTCTT AAAAAATAA ACATCCCCC AACCACAGCA GTGCCAGTTT  
CCATGTGACA AACTAGATC CAAATGACT ACTCGCTCT CATTATCATG ATGGAAGAGC CCAGGCTTGA GAAAGAGCC  
CGCTGCGGAT TACTCAAGG CGATACTGAC ACAGGGTTTG TGTTTTCCA ACATGAGTTT TGAGTCTTCA CAGCTGTTT  
GCTCTTTTG TGTGTTTTT CCCTGTTAGG TGTTTTGGT GGTATAGGCG ATCCTGTAC CTGCCTTAAG AGTGGAGCCA  
TATGTATCC AGTCTTTTG CCTAGAAGT ATAAACAAAT TGGACCTGT GGTCTCCCTG GAACAAAATG CTGCAAAAAG  
CCATGAGGAG GCAAGAAGC TGCTGTGGT GATGCGGATT CAGAAAGGGC TCCTCATCA GAGACGTGCG ACATGTAAC  
CAATTAAC TATGGTGTCC AAAGATACGC AATCTTATC CTAGTAATTG TGGTCATTGG GTGATGTTGG TTTGGGCAGG  
CCATCTTAA TATCCTTGA ACACCTTTT CTGCTCTCA GGAAGGGGTC AGGGCTGCCA CAGCGGGGCT TGGAGTGCTT  
TCCAGGGTCA CAGGCATCTG TATCTTTGG ATTCCTTGAC CTCCCCATT TATTCCTGCT ATTTCTGCT  
TTGCTCTCC TGCATCTCC CTTGCTATG CCTACCTAC CCCACATCT CCCTAAAAA AGCAAGCCCA ACTCAAGAC  
CAGTTCCTC ATGGAATCAT AGTGGATCT CCAAGGGAGG GATGCCCAG TCCTCTGTC TTCACAAGAC TCCCTCTTC  
TGGTAAGGT TTCTATGCA ATTAT GAATCCCTG TAAGCCTGT TACAGGGCT GCACCCAGA TACAACCTGA  
CCTGTGTCCA AGGCGGGCAA CTCAACCTT AGATATTGAA TGGTCCCAT GGCACCAATG CTTAAACACC AGCAGCCCTC  
ACAACCACAG ATCGTGTGTT AAGGATGAGG AGGTAGTTCT TGGATGCAC AGGCTTCAAT CCAATGGGC TCATGACGCC  
GCAGCACACA CCCAGTCTG AGCCTGAAGA GTTGGAGCAT GTCTTACACA GAAAGCATC AGACATGATC ATGGGCTCAG  
GGATACACT GTTCTCCGAT GTGTACCAGT GAAGGATGGA AACTCTATG CCTCCAGAA AGCACCCTC AAGCTTTGTC  
TGAATGCTC TCTGAAGGCC CACAAGGCTG AGAGGCTGTG CAACACCAGC AGTAAAGTGA ATGCCAGAC TCCCACCTC  
TTCTTGGGT GCCATCTGG AAAGGCCACT CCCACCTGA TGGTAATGC CTCAGACCAG TTCTTGGGCC AGATGATCT  
AGACAATTGT TTAAGCTTAA ACTGTTTATT GGCAAGCAA ACAGGTGATA GTACCTCTGG GGAACCACAT GCCGCTGTA  
CATCCAGATC TACGAGAAAC CAAAAATGT CTGTTCCACA TAGCAACAGA AGCCAGGTA GACTCAGTC TCACCTGGGT  
GTTCTCAAC ATCCAGCTC AGCCAAATGG CTTTCTTAG TTTTATGGT TAGACCCAG GTCCTCGGGA CACTGCTTTA  
GAAACACATT CCAATCTCT CTCTGTGTC AGGTGGCATT CCTATCCCAA TCTTTTGA GGGCGTATC TGTGATACGC  
AGCCAGGCTG TCCAGAGGC CTTAAATATT CCCTGGTGC AGGTAGTTCA GCTTAGCCAC AGCCAATGCA TCACAGGGTC  
AACTGTGTTA GGAGCCATTG AGAATCCATA GTTGGTTGCT GCTGGGCT GGCAGGGCT GACCAAGGTA GATGAGAGGT  
TCCTCTGTG AGTTTACTT TAACCTCACC TTCCACCAA ATTCTCAAC TGTCTTGCC ACCACAATTA TTTAATGGAC  
CCAACAGAAA GTAACCCCGG AAATTAGGAC ACCTCATCC AAAAGACCTT TAAATAGGGG AAGTCCACTT GTGCACGGCT  
GCTCTTGT ATAGAAGACC TGGACAGAG GACTGTCTG TGCCCTCTCT GGTACCCCTG CCTAGCTAGA GGATCTGTAA  
GTACTACAAA ACTTAAACTT TACTGAGT TTTATCAT TGGCTATGC CTCCAATCTG ACCTCTGACT TTGGGCGCGC  
CCCAGAGGGA CCCAGCGGT GAATCCCTGC TAGGAACGTC TGTCCGACC TCTGGTACT GCTGGGACG ATGGCTTCCA  
GCTAACTTAA TAGAGAACT CAAGCAGTTT CTTCTAAAT ACACATGTCA CATGCTCTGG TTGACATGTC CAGTAAGAAG  
ACTATCACAG GTCTTTGGA CATTCTTTG AGAGAAACCT ATTTAGGTCC TTGGTCTGTT TTCAATCAG GTTGTGAT  
TTTGTCTAT GAGTGTGTTG AATTCCTTAT GTATTGAGT ATTTGCCCT TCTGCCATGT AGGTTTGA AATTTTCT  
CTCATTTCT GGGTTATCTT TCACTCGGT TGATGTTTC CTTGCTGTG CAGATGCTT AGCGTTAAAT GAAGCCACAC  
TTGTCTATT TCCCTTTAT TGCTGTGCC TTTGGTGTCA TGGCTAAGAA ATCAATACAT CAAAGCTTT  
ATCCTTCTAT ACATCTCTAG TAGTTTATGG TTTAGTTGT TACATTTAGG TTTCAATTC ATCTGAGT TAGTTCTTA

CATGGTGTGA GATAAAGATT TAAATACATA CATATATAAA ATCATGAGGT AGTGTAACAT ATAAATATAC AATTGTAAAT  
TGTTACTCAA GTCTAAGTAG AGGTGGAAAT AATAAACTTT CTTTTTTTCTA CTAAACCAC TCTGTGCAC TGAGCTGATT  
TCACCTTTAG CCTGATAAAA TCATTGTCCT CTCCACCCTG ATTCCTACAG GAGACTACTC ACCCCATAAC CTCAAAAACC  
TCTTCATGAG GATGGTAAGT CACCTGAATC CTGAAGTGAA TTAATCGCTA TTCCATTGGA ACTCATATAG GACACCAGAA  
TCTAGACCTC CAGAGAACAG CAGGACCCAT CTTCAGAAAA TAAGAAGCAT TTGTTCCCTG AGCCTGTGTA ATCAAAAGTGC  
AATTTCTATT CTTTTTGGAA TGTTAAAAAG TGAATCATAA TATTTAAGCA GGTGAACCCA CGAGTAACAT AGCAGGGTCT  
TTCTTGTCAT TTTAGCTCC AACCTAGCAC AGACATTAATA GGTACAGATG TATACTAGCA TGAACCTGGG AGAACAGGAG  
CATTGAGCA ACCTTGAGAC CAATGGGCT CTCTTATAAA ATGCACACCT CCTCTCACTG AGATTGAGGA AGGTTTCTTG  
TCTCCGAGCC TTCTCCAGT AGAGCTATAA ATCCAGGCTG GCTCCTCCCT CCCACACAG CTGCTCCTGC TCTCCCTCT  
CCAGGTGACC CCAGCCATGA GGACCCCTGC CATCCTTGCT GCCATTCTCC TGGTGGCCCT GCAGGCCAG GCTGAGCCAC  
TCCAGGCAAG AGCTGATGAG GTTGCTGCAG CCCCAGGAGCA GATTGCAGCG GACATCCAG AAGTGGTGTG TTCCCTTGCA  
TGGGACGAAA GCTTGGCTCC AAAGCATCCA GGTGAGAGAG GCAGGATGCT AGAGCTGCTA AGTCTAGAGG GAAGGACGGG  
AGAGAGGTTT CAGAGTTGGG TCTCAGCAGT CTATGCTACT GAGGTGGCTT CACTTAGAAT CTCTGGGCAT TGATTTCTC  
ATCTAGAAAT TGAACAGAGA GCCAAATAAA CCTGAGAAAC TTTATTTCTC CAAAGACTTG ATTCCAAGAA ACATCTGTGA  
AATTCATAA GTTTAAGATA TGAAGAGACA GACTAGTTAT TTCTGGATCT AAACAAGTAG ACTTAGTTGT AAAGAGAACA  
TTTTACTCTA TCTACAGAAG AGCTTTTAAA AACTGCAGCC AAGCCTGAGG GTAAGTTCAG GTGTGTGTGT GATGGGGCAG  
GAATGCAAAA ATGAGAGCAA AGGAGAATGA GTCTCAAATT CTGTGTGACA AGCACTGCTC TGCGTGTGTA TTCTATCGA  
CTGAGGTTGT TCGTGCTACC GGCTGCAATG CAGCCAGCAT CACCTGTGCTG CTAGCATGTG ACTTCCCCGA GATTCTTTT  
CTTACCCT GCTAACTCCA TACTCAATTT CTATGCTCT CCCTGTCCCA GGCTCAAGGA AAAACATGGA CTGTATTGCT  
AGAATACCAG CGTGCAATTG AGGAGAACGT CGCTATGGAA CCTGCATCTA CCAGGGAAGA CTCTGGGCAT TCTGTGCTG  
AGCTTGACA AAAAGAAAAA TGAGCTCAA ATTTGCTTTG AGAGCTACAG GGAATTGCTA TTAATCTGT ACCTCTGCT  
CAATTTCTT TCCTCATCTC AAATAAATGC CTGTGTACAA GATTCTGTG TTTCCACCTC TTAATGTGT GATATGTGT  
TGTGTCAAGA CACTTGGGAT ACACGTACCA AAACGCAAAA TCAAATTTT GAACAATATA-3' (FRAG. NO: ) (SEQ. ID  
NO:2473)

#### Human Defensin 3 Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CGCTGCBBTC TGCTCCGGGG CTGCBGCBBC CTCBTCBGCTC TTGCTGGBGTG GCTCBGCTGG GCCTGCBGGG  
CCBCCBGBGB BTGGCBGCBGB GBTGGCBGGBG TCCTCBTGGC TGGGGTBCCT GGBGBGGBGB GBGCBGGGG  
TCCTCBTGGC TGGGGTCCCT CTCTCCGTC CT CCTACCTTGC TATAGAAGAC CTGGGACAGA GGACTCTGT CTGCCCTCTC  
TGGTCACCTT GCCTAGCTAG AGGATCTGTG ACCCCAGCCA TGAGGACCCT CGCCATCCTT GCTGCCATTC TCCTGGTGGC  
CCTGCAGGCC CAGGCTGAGC CACTCCAGGC AAGAGCTGAT GAGGTTGCTG CAGCCCCGGA GCAGATTGCA GCGGACATCC  
CAGAAGTGGT TGTTTCCCTT GCATGGGACG AAAGCTTGGC TCCAAAGCAT CCAGGCTCAA GGAAAAACAT GGACTGCTAT  
TGCAGAATAC CAGCGTGCAT TGCAGGAGAA CGTCGCTATG GAACCTGCAT CTACCAGGGA AGACTCTGGG CATTCTGCTG  
CTGAGCTTGC AGAAAAAGAA AAATGAGCTC AAAATTTGCT TTGAGAGCTA CAGGGAATTG CTATTACTCC TGTACCTTCT  
GCTCAATTC CTTT-3' (FRAG. NO:1804) (SEQ. ID NO:1815)

5'-CCTACCTTGC TATAGAAGAC CTGGGACAGA GGACTGCTGT CTGCCCTCTC TGGTCACCTT GCCTAGCTAG AGGATCTGTG  
ACCCAGCCA TGAGGACCCT CGCCATCCTT GCTGCCATTC TCCTGGTGGC CCTGCAGGCC CAGGCTGAGC CACTCCAGGC  
AAGAGCTGAT GAGGTTGCTG CAGCCCCGGA GCAGATTGCA GCGGACATCC CAGAAGTGGT TGTTTCCCTT GCATGGGACG  
AAAGCTTGGC TCCAAAGCAT CCAGGCTCAA GGAAAAACAT GGACTGCTAT TGCAGAATAC CAGCGTGCAT TGCAGGAGAA  
CGTCGCTATG GAACCTGCAT CTACCAGGGA AGACTCTGGG CATTCTGCTG CTGAGCTTGC AGAAAAAGAA AAATGAGCTC  
AAAATTTGCT TTGAGAGCTA CAGGGAATTG CTATTACTCC TGTACCTTCT GCTCAATTC CTTT-3' (FRAG. NO: ) (SEQ.  
ID NO:2478)

5'-GAATTCCTG TAAGCCCTGT TACAGGGGCT GCACCCAGCA TACAACCTGA CCTGTGTCCA AGGCGGGCAA CTCAACCTT  
AGATATTGAA TGGGTCCCAT GGCACCAATG CTAAACACC AGCAGCCCTC ACAACCACAG ATCGTGTGTTT AAGGATGAGG  
AGGTAGTTCT CTGGATGCAC AGGCTTCAAT CCAAATGGG TCATGACGCC GCAGCACACA CCAAGTCTGC AGCCTGAAGA  
GTTGGAGCAT TGCATTACA GAAAGCATCC AGACATGATC ATGGGCTCAG GGATACACCT GTTCTCCGAT GTGTACCACT  
GAAGGATGGA AACTCCTATG CTTCCAGAA AGCACCATC AAGCTTTTGC TGAATGCTT TCTGAAGGCC CACAAGCTG  
AGAGGCTGTG CAACACCAGC AGTAAAGTGA ATGCCAGAC TCCCACTCTC TTTCTTGGT GGCCATCTGG AAAGGCCACT  
CCCACCTGA TGGCTAATGC CTCAGACCAG TTCTTGGCCC AGATGATCCT AGACAATTGT TTAAGCTTAA ACTGTTCAAT  
GGCCAAGCAA ACAGGTGATA GTACCTCTGG GGAACCAT CATCCAGATC TCAGGAGAAC CCAAAAATGT  
CTGTTCCACA TAGCAACAGA AGCCAGGTA GCACTCAGTC TCACCTGGGT GTTCTCCAAC ATCCAGCTC AGCCAAATGG  
CTTTCATTAG TTTTATGTT TAGACCCAG GTCCTCGGGA CACTGCTTTA GAAACACATT CCAAATCCTC CTCTGTGTGC  
AGGTGGCATT CTATCCCAA TCTCTTTGCA GGGCGTATC TGTGATACGC AGCCAGGCTG TCCAGAGGC CTAAATATT  
CCCTTGGTGC AGGTAGTTCA GCTTAGCCAC AGCCAATGCA TCACAGGCTC AACTGTGTTA GGAGCCATTG AGAATCCATA  
GTTGGTTGCT GCCTGGGCTT GGCCAGGGCT GACCAAGGTA GATGAGAGGT TCCTCTGTGG AGTTCTACTT TAACCTCACC  
TTCCACCAA ATTTCTCAAC TGTCTTGCC ACCACAATTA TTTAATGGAC CCAACAGAAA GTAACCCCGG AAATTAGGAC  
ACCTCATCCC AAAAGACCTT TAAATAGGGG AAGTCCACTT GTGCACGGCT GTCCTTGTCT ATAGAAGACC TGGGACAGAG  
GACTGCTGTC TGCCCTCTCT GGTCAACCTG CTTAGCTAGA GGATCTGTAA GTACTACAAA ACTTAACTT TACTGAGT  
TTTCATCATT GAAGCTATGC CTCAATCTG ACCTTGACT GTGGGGCCGC CCCAGAGGGA CCCAGGGGT GAATCCCTGC  
TAGGAACGTC TGTCCGAC TCTGGTACT GCTGGGACG ATGGCTTCCA GCTAACTTAA TAGAGAACT CAAGCAGTTT  
CCTTCTAAAT ACACATGTCA CATGCTCTGG TTGACATGTC CAGTAAGAAG ACTATCACAG GTCTTTGGAA CATTCTTTG  
AGAGAAACCT ATTTAGGTCC TTGGTCTGTT TTTCAATCAG GTTGTGTTGAT TTTTGCTATT GAGTTGTTGG AATTCCTTAT  
GTATTGAGAT ATTTGCCCT TCTGCCATGT AGGTTTGA AATATTTTCT CTCATTTTCT GGGTTATCTT TCACTCGGT  
TGATTGTTT CTTTGTCTG CAGATGCTTT AGCGTTAAAT GAAGCCACAC TTGTCTATT TCCCTTTTAT TGCCTGTGCC  
TTTGGTGTCA TAGCCAAGAA ATCATTACCT ACATCAATGT CAAAAGCTTT ATCCTTCTAT ACATTCTAG TAGTTTATGG  
TTTCAGTTGT TATCTTAGG TTTCAATTCT ATTCTGATGT GATGTTCTTA CATGGTGTGA GATAAAGATT TAAATACATA  
CATATATAAA ATCATGAGGT AGTGTAACAT ATAAATATAC AATTGTTAAT TGTACTCAA GTCTAAGTAG AAGTGAAAT  
AATAAACTTT CTTTTTTTCTA CTAAACCAC TCTGTGTCAC TGAGCTGATT TCACCTTAG CCTGATAAAA TCATTGCTCT  
CTCCACCCTG ATTCCTACAG GAGACTACTC ACCCCATAAC CTCAAAAACC TCTCATGAG GATGGTAAGT CACCTGAATC  
CTGAAGTGAA TTAATCGCTA TTCCATTGGA ACTCATATAG GACACCAGAA TCTAGACCTC CAGAGAACAG CAGGACCCAT

CTTCAGAAAA TAAGAAGCAT TTGTTCCCTG AGCCTGTTGA ATCAAAGTGC AATTCTATT CTTTTTGAA TGTAAAAAG  
TGAATCATAA TATTTAAGCA GGTGAACCCA CGAGTAACAT AGCAGGGTCT TTCTTGTCAT TATTAGTCC AACCTAGCAC  
AGACATTAAG GGTACAGATG TATACTAGCA TGAAGTGGG AGAACAGGAG CATTGAGCA ACCTGAGAC CAATGGGCCT  
CTCTTATAAA ATGCACACCT CCTCTACTG AGATTGAGGA AGGTTTCTTG TCTCCGAGCC TTCTCCCACT AGAGCTATAA  
ATCCAGGCTG GTCCTCCCT CCCACACAG CTGCTCCTGC TCTCCCTCCT CCAGGTGACC CCAGCCATGA GGACCCTCGC  
CATCCTTGCT GCCATTCTCC TGGTGGCCCT GCAGGCCAG GCTGAGCCAC TCCAGGCAAG AGCTGATGAG GTTGCTGCAG  
CCCCGGAGCA GATTGCAGCG GACATCCAG AAGTGGTGT TTCCCTTGCA TGGGACGAAA GCTTGGCTCC AAAGCATCCA  
GGTGAGAGAG GCAGGCATGC AGAGCTGCTA AGTCTAGAGG GAAGGACGGG AGAGAGGTTT CAGAGTTGGG TCTCAGCAGT  
CTATGTCAT GAGGTGGCTT CACTTAGAAT CTCTGGGCAT TGATTTTCTC ATCTAGAAAT TGAACAGAGA GCCAAATAAA  
CCTGAGAAAC TTTATTTCTC CAAAGACTTG ATTCCAAGAA ACATCTGTGA AATTCACTAA GTTTAAGATA TGAAGAGACA  
GACTAGTTAT TTCTGGATCT AAACAAGTAG ACTTAGTTGT AAAGAGAACA TTTACTCTA TCTACAGAAG AGCTTTTAAA  
AACTGCAGCC AAGCCTGAGG GTAAGTTAG GTGTGTGTGT GATGGGGCAG GAATGCAAAA ATGAGAGCAA AGGAGAATGA  
GTCTCAAATT CTGTGTGACA AGCACTGCTC TGCGTGTGTTA TTCCCTATCGA CTGAGGTTGT TCGTGCTACC GGCTGCAATG  
CAGCCAGCAT CACCTGTCAG CTAGCATGTG ACTTCCCGA GATTCTTTT CTTACCCACT GCTAACTCCA TACTCAATTT  
CTCATGCTCT CCCTGTCCCA GGCTCAAGGA AAAACATGGA CTGCTATTGC AGAATACCAG CGTGCATTGC AGGAGAACGT  
CGCTATGGAA CCTGCATCTA CCAGGGAAGA CTCTGGGCAT TCTGCTGCTG AGCTTGCAAG AAAAGAAAAA TGAGCTCAAA  
ATTGCTTTG AGAGCTACAG GGAATTGCTA TTAATCTGT ACCTTCTGCT CAATTTCTT TCTCATCTC AAATAAATGC  
CTTGTTACAA GATTTCTGTG TTTCACCTC TTAATGTGT GATATGTGTC TGTGTCAAGA CACTTGGGAT ACACGTACCA  
AAACGCAAAA TCAAATTTT GAACAATATA-3' (FRAG. NO: 2477)

5'-GGCBGCBGG-3' (FRAG. NO:1805) (SEQ. ID NO:1816)

5'-GG CTG GGG-3' (FRAG. NO:1806) (SEQ. ID NO:1817)

5'-GGGGTCBCC-3' (FRAG. NO:1807) (SEQ. ID NO:1818)

5'-GGG TCC TCB TGG CTG GGG TC-3' (FRAG. NO:1216) (SEQ. ID NO:1226)

5'-CCT CTC TCC CGT CCT-3' (FRAG. NO:1217) (SEQ. ID NO:1227)

5'-CGCTGCBTC TGCTCCGGG CTGCBGCBBC CTCBTCBCTC TTGCTGGBGTG GCTCBGCTGG GCCTGCBGGG  
CCBCCBGBGB BTGGCBGCBG GBTGGCBGGG TCCTCBTGGC TGGGGTCBCT GGBGBGGGB GBGCBGG-3' (FRAG.  
NO:1808) (SEQ. ID NO:1819)

#### Human Macrophage Inflammatory Protein-1-alpha/RANTES

##### Receptor Nucleic Acid and Antisense Oligonucleotide Fragments

5'-GTCTTTGTT CTGGGCTCGT GCCCBTCCC GGCTTCTCTC TGGTCCGTC CTCTGTGGTG TTTGGCCCTG CTTCTTTTG  
CCTGTTGAGG GGGCAGCAGT TGGGCCCAA AGGCCTCTC GTTCACCTTC TGGCAGGAGT GCATCCCCATA  
GTCAAATCT GTGGTGTGT CATAGTCTC TGTGGTGTG GGAGTTTCCA TCCCGGCTTC TCTCTGGTTC CAAGGGAGB  
GGGGGCBGB GTTGGGCCCC BBBGGCCCTC TCGTTCBCT TCTGGCBGG BTGTGCBTC CCBTGTCTB BCTCTGTGGT  
CGTGTCTBG TCCTCTGTG TGTGGBGT TTCCBTCCG GCTTCTCTC GGTTCBGG GB-3' (FRAG. NO:1809) (SEQ. ID  
NO:1820)

5'-GGGCC CC-3' (FRAG. NO:1810) (SEQ. ID NO:1821)

5'-GGGGGCBGC-3' (FRAG. NO:1811) (SEQ. ID NO:1822)

5'-CCCGGCTTC-3' (FRAG. NO:1812) (SEQ. ID NO:1823)

5'-GTC TTT GTT TCT GGG CTC GTG CC-3' (FRAG. NO:1218) (SEQ. ID NO:1228)

5'-CCB TCC CGG CTT CTC TCT GGT TCC-3' (FRAG. NO:1219) (SEQ. ID NO:1229)

5'-GTC CTCTGT GGT GTT TGG-3' (FRAG. NO:1220) (SEQ. ID NO:1230)

5'-CCC TGC TTC CTT TTG CCT GTT-3' (FRAG. NO:1221) (SEQ. ID NO:1231)

5'-GAGGGGGCAG CAGTTGGGCC CAAAGGCC TCTCGTTAC CTTCTGGCAC GGAGTTGCAT CCCCATAGTC AAATCTGTG  
GTCGT-3' (FRAG. NO:1222) (SEQ. ID NO:1232)

5'-GTCATAGTCTCTGTGGTGTGAGTTCCATCCCGCTTCTCTGTTTCAAGGA-3' (FRAG. NO:1223) (SEQ. ID  
NO:1233)

5'-GBGGGGGCBG CBGTTGGGCC CBBBGGGCC TCTCGTTCBC CTTCTGGCBC GGBGTTGCBT CCCBTBGT BBTCTGTG  
GTCGTG-3' (FRAG. NO:1224) (SEQ. ID NO:1234)

5'-TCBTGCTCTGTGGTGTGGBGTTCCBTCCCGCTTCTCTGTTTCCBGGGB-3' (FRAG. NO:1225) (SEQ. ID NO:1235)

##### RANTES Antisense Oligonucleotide Fragments

5'-GGGCBGGGG CBGTGGGCGG GCBTGTBGG CBBGCBGCB GGGTGTGGT TCCBGGBBT BTGGGGGGC BBTGCBGG  
GCGCBGGGG CBGTGCBBT GBGGTGBCB GCGGGCGTG CCGGGBGC CTTCTGGTB CTTGTGGBG GGCTGTCGB  
GGGGGTGTG TGTCCGCTT GCGGTTCTT CGGGTGTTC TTCTGCGG TGGCTGCTG CTCGTCGTGGT CGTCCGCTC  
CCGGGTTCT CTCGCTCTG CGCCCTTC TTCTGTGCG TGTCTCTCC TTCTTGCT CT-3' (FRAG. NO: 1813) (SEQ. ID  
NO: 1824)

5'-GGGTTGGC-3' (FRAG. NO: 1814) (SEQ. ID NO: 1825)

5'-CGGG CBG-3' (FRAG. NO: 1815) (SEQ. ID NO: 1826)

5'-CCCGGTTTC-3' (FRAG. NO: 1816) (SEQ. ID NO: 1827)

5'-GGGTGTGGT-3' (FRAG. NO: 1817) (SEQ. ID NO: 1828)

5'-GGGCBGGGG CBGTGGGCGG GCBTGTBGG CBBGCBGCB GGGTGTGGT TCCBGGBBT BTGGGGGGC BBTGCBGG  
GCGC-3' (FRAG. NO:1226) (SEQ. ID NO:1236)

5'-BGBGGCBGTGCBTGTGGBTGCBGCGGGCGTCCGCGGBGCCTTCTGTGGBGCTGTCGGBGG-3'  
(FRAG. NO:1227) (SEQ. ID NO:1237)

5'-GGGTGTGGTGTCCGCTTGGCGTTCTTTCGGGTGTTCTTCTCTGGTGGCTGCTGCTCGTGGTCT-3' (FRAG. NO:1228)  
(SEQ. ID NO:1238)

5'-GCTCCGCTCCGGGTTCTGCTCTGCTGCGCCCTTCTTCTTGTGCTGCTCCTTCTTCTGCTCT-3' (FRAG. NO:1229)  
(SEQ. ID NO:1239)

5'-GGGTGTGGTGTCCG-3' (FRAG. NO:1230) (SEQ. ID NO:1240)

5'-CTTGGCGGTTCTTTCCGGGTG-3' (FRAG. NO:1231) (SEQ. ID NO:1241)  
 5'-TTTCTTCTCTGGGTTGGC-3' (FRAG. NO:1232) (SEQ. ID NO:1242)  
 5'-CTGCTGCTCGTGGTTC-3' (FRAG. NO:1233) (SEQ. ID NO:1243)  
 5'-GCTCCGCTCCCGGGTTC-3' (FRAG. NO:1234) (SEQ. ID NO:1244)  
 5'-GTCTCGTCTGTGCCCC-3' (FRAG. NO:1235) (SEQ. ID NO:1245)  
 5'-CTTCTTCTTGTGTC-3' (FRAG. NO:1236) (SEQ. ID NO:1246)  
 5'-GTGTCTCTCCCTTCTGCTCT-3' (FRAG. NO:1237) (SEQ. ID NO:1247)  
 5'-GGGCBGGGG CBGTGGGCGG GCBGTGTBGG CBBGCBGCB GGGTGTGGT TCCGBGGBT BTGGGGGGC BGTGCBGGG  
 GCGCBGGG CBGTGCBGT GBGGTGBCB GCGBGGCGT CCGGGBGBC CTTCBTGGT CCTGTGGGB GGCTGTCGB  
 GG-3' (FRAG. NO:1818) (SEQ. ID NO:1829)

#### Human Muscarinic Acetylcholine Receptor HM1\* Nucleic Acid and Antisense Oligonucleotide Fragments

5'-GCTGCCCGG GGGGTGTGCG CTTGGCGCTC CCGTGTCTG TTTCTGTCT CCGGTCCCC CTTCCTGGC GTCTCGGGCC  
 TCGTCTCT TCCTTCTT CTTCCGCTC CGTGGGGCT GCTTGGTGG GGCCTGTGCT CCGGGTCCC GGGCTTCTGG  
 CCTTGGCGT TCATGGTGC TAGGTGGGG GTTCBTGGT GCTBGGTGG GC-3' (FRAG. NO:1819) (SEQ. ID NO: 1830)  
 5'-GGTGGGGC-3' (FRAG. NO:1820) (SEQ. ID NO: 1831)  
 5'-GCCCCGGGGG-3' (FRAG. NO:1821) (SEQ. ID NO: 1832)  
 5'-CGG GGC TTC TGG CCC-3' (FRAG. NO:1822) (SEQ. ID NO: 1833)  
 5'-GTT CBT GGT GGC TBG GTG GGC C-3' (FRAG. NO:1238) (SEQ. ID NO:1248)  
 5'-GCT GCC CGG CGG GGT GTG CGC TTG GC-3' (FRAG. NO:1239) (SEQ. ID NO:1249)  
 5'-GCT CCC GTG CTC GGT TCT CTG TCT CCC GGT-3' (FRAG. NO:1240) (SEQ. ID NO:1250)  
 5'-CCC CCT TTG CCT GGC GTC TCG G-3' (FRAG. NO:1241) (SEQ. ID NO:1251)  
 5'-GCC TTC GTC CTC TTC CTC TTC CTT CC-3' (FRAG. NO:1242) (SEQ. ID NO:1252)  
 5'-GCT CCG TGG GGG CTG CTT GGT GGG GGC CTG TGC CTC GGG GTC C-3' (FRAG. NO:1243) (SEQ. ID NO:1253)  
 5'-CGG GGC TTC TGG CCC TTG CC-3' (FRAG. NO:1244) (SEQ. ID NO:1254)  
 5'-GTT CAT GGT GGC TAG GTG GGG C-3' (FRAG. NO: 1245) (SEQ. ID NO:1255)

#### Human Muscarinic Acetylcholine Receptor HM3\* Nucleic Acid and Antisense Oligonucleotide Fragments

5'-GGG GTG GGT BGG CCG TGT CTG GGGGT GGC CBT GTT GGT TGC CTCT TGG TGG TGC GCC GGG CGC TCT TGG CTT  
 TCT TCT CCT TCG GGC CCT CGG GCC GGT GCT TGT GGGCT CCT CCC GGG CGG CCT CCC CGG GCG GGG GCT TCT  
 TGGCG CTG GCG GGG GGG CCT CCGTCT CTG TGG CTG GGC GTT CTT TGG TGT TCT GGG TGGTGG CGG GCG TGG TGG  
 CCT CTG TGGGGG CCC GCG GCT GCB GGG GTTG CCT TGT TGC TCT GTCCTT TGC GCT CCC GGG CGG CCGGG GTG GGT  
 AGG CCG TGT CTG GGGGT GGC CAT GTT GGT TGC CGGG CCC GCG GCT GCA GGG G-3' (FRAG. NO:1823) (SEQ. ID  
 NO:1934)  
 5'-CCC GGG CGG-3' (FRAG. NO:1824) (SEQ. ID NO:1835)  
 5'-G GCG GGG GGG CC-3' (FRAG. NO:1825) (SEQ. ID NO:1836)  
 5'-CCC GGG CCG CC-3' (FRAG. NO: 1826) (SEQ. ID NO: 1837)  
 5'-GG CCG TGT-3' (FRAG. NO:1827) (SEQ. ID NO:1838)  
 5'-GGG GTG GGT BGG CCG TGT CTG GGG-3' (FRAG. NO:1246) (SEQ. ID NO:1256)  
 5'-GTT GGC CBT GTT GGT TGC C-3' (FRAG. NO:1247) (SEQ. ID NO:1257)  
 5'-TCT TGG TGG TGC GCC GGG C-3' (FRAG. NO:1248) (SEQ. ID NO:1258)  
 5'-GCG TCT TGG CTT TCT TCT CCT TCG GGC CCT CGG GCC GGT GCT TGT GG-3' (FRAG. NO:1249) (SEQ. ID NO:1259)  
 5'-GCT CTT CCC GGG CGG CCT CCC CGG GCG GGG GCT TCT TG-3' (FRAG. NO:1250) (SEQ. ID NO:1260)  
 5'-GCG CTG GCG GGG GGG CCT CCT CC-3' (FRAG. NO:1251) (SEQ. ID NO:1261)  
 5'-GCT CTG TGG CTG GGC GTT CCT TGG TGT TCT GGG TGG C-3' (FRAG. NO:1252) (SEQ. ID NO:1262)  
 5'-TGG CGG GCG TGG TGG CCT CTG TGG TGG-3' (FRAG. NO:1253) (SEQ. ID NO:1263)  
 5'-GGG CCC GCG GCT GCB GGG G-3' (FRAG. NO:1254) (SEQ. ID NO:1264)  
 5'-TTG CCT GTC TGC TTC GTC-3' (FRAG. NO:1255) (SEQ. ID NO:1265)  
 5'-CTT TGC GCT CCC GGG CCG CC-3' (FRAG. NO:1256) (SEQ. ID NO:1266)  
 5'-GGG GTG GGT AGG CCG TGT CTG GGG-3' (FRAG. NO:1257) (SEQ. ID NO:1267)  
 5'-GTT GGC CAT GTT GGT TGC C-3' (FRAG. NO:1258) (SEQ. ID NO:1268)  
 5'-GGG CCC GCG GCT GCA GGG G-3' (FRAG. NO:1259) (SEQ. ID NO:1269)

#### Human Fibronectin\* Antisense Oligonucleotide Fragments

5'-CGG TTT CCT TTG CGG TC TTG GCC CGG GCT CCG GGT G CCC GCC CGC CCG CCG GCC GCC GC CCC GCC GGG CTG  
 TCC CCG CCC CGC CCC GGC CCG GGG CGC GGG GG CGG CCC TCC CGC CCC TCT GG GCC GGC GCG GGC GTC GG CCG  
 CTC GCG CCT GGG GTT CCC TCT CCT CCC CCT GTG C GCC TGC CTC TTG CTC TTCTGC GTC CGC TGC CTT CTC CC CTC  
 TCC TCG GCC GTT GCC TGT GC TGT CCG TCC TGT CGC CCT TCC GTG GTG C TGT TGT CTC TTC TGC CCT C GGT GTG  
 CTG GTG CTG GTG GTG CCT CTG CCC GTG CTC GCCCTG CCT GGG CTG GCC TCT TCG GGT GTG GCT TTG GGG CTC  
 TCT TGG TTG CCC TTT CTT CTC GTG GTG CCT CTC CTC CCT GGC TTG GTC GT TGT CTG GGG TGG TGC TCC TCT CCC  
 TTT CCC TGC TGG CCG TTT GT  
 CCT GTT TTC TGT CTT CCT CT TTC CTC CTG TTT CTC CGT TTG GCT TGC TGC TTG CGG GGC TGT CTC C CTT GCC CCT  
 GTG GGC TTT CCC TGG TCC GGT CTT CTC CTT GGG GGT C GCC CTT CTT GGT GGG CTGGCT CGT CTG TCT TTT TCC TTC  
 C TGG GGG TGG CCG TTG TGG GCG GTG TGG TCC GCC T TGC CTC TGC TGG TCT TTC-3' (FRAG. NO:1828) (SEQ. ID NO:  
 1839)  
 5'-GGCCCCGGGC-3' (FRAG. NO:1829) (SEQ. ID NO: 1840)  
 5'-GCCGGCGCGGGCG-3' (FRAG. NO:1830) (SEQ. ID NO:1841)  
 5'-GCCTGGGCTGGCC-3' (FRAG. NO:1831) (SEQ. ID NO: 1842)  
 5'-GGGGG TGGCCG-3' (FRAG. NO:1832) (SEQ. ID NO: 1843)  
 5'-GG GGG TGG CCG TTG TGG GCG G-3' (FRAG. NO:1833) (SEQ. ID NO: 1844)  
 5'-CGG TTT CCT TTG CGG TC-3' (FRAG. NO:1260) (SEQ. ID NO:1270)

5'-TTG GCC CGG GCT CCG GGT G-3' (FRAG. NO:1261)(SEQ. ID NO:1271)  
5'-CCC GCC CGC CCG CCG GCC GCC GC-3' (FRAG. NO:1262)(SEQ. ID NO:1272)  
5'-CCC GCC GGG CTG TCC CCG CCC CGC CCC-3' (FRAG. NO:1263)(SEQ. ID NO:1273)  
5'-GGC CCG GGG CGC GGG GG-3' (FRAG. NO:1264)(SEQ. ID NO:1274)  
5'-CGG CCC TCC CGC CCC TCT GG-3' (FRAG. NO:1265)(SEQ. ID NO:1275)  
5'-GCC GGC GCG GGC GTC GG-3' (FRAG. NO:1266)(SEQ. ID NO:1276)  
5'-CCG CTC GCG CCT GGG GTT CCC TCT CCT CCC CCT GTG C-3' (FRAG. NO:1267)(SEQ. ID NO:1277)  
5'-GCC TGC CTC TTG CTC TTC-3' (FRAG. NO:1268)(SEQ. ID NO:1278)  
5'-TGC GTC CGC TGC CTT CTC CC-3' (FRAG. NO:1269)(SEQ. ID NO:1279)  
5'-CTC TCC TCG GCC GTT GCC TGT GC-3' (FRAG. NO:1270)(SEQ. ID NO:1280)  
5'-TGT CCG TCC TGT CGC CCT TCC GTG GTG C-3' (FRAG. NO:1271)(SEQ. ID NO:1281)  
5'-TGT TGT TCT TGT TGC CCT C-3' (FRAG. NO:1272)(SEQ. ID NO:1282)  
5'-GGT GTG CTG GTG CTG GTG GTG GTG-3' (FRAG. NO:1273)(SEQ. ID NO:1283)  
5'-CCT CTG CCC GTG CTC GCC-3' (FRAG. NO:1274)(SEQ. ID NO:1284)  
5'-CTG CCT GGG CTG GCC TCT TCG GGT-3' (FRAG. NO:1275)(SEQ. ID NO:1285)  
5'-GTG GCT TTG GGG CTC TCT TGG TTG CCC TTT-3' (FRAG. NO:1276)(SEQ. ID NO:1286)  
5'-CTT CTC GTG GTG CCT CTC CTC CCT GGC TTG GTC GT-3' (FRAG. NO:1277)(SEQ. ID NO:1287)  
5'-TGT CTG GGG TGG TGC TCC TCT CCC-3' (FRAG. NO:1278)(SEQ. ID NO:1288)  
5'-TTT CCC TGC TGG CCG TTT GT-3' (FRAG. NO:1279)(SEQ. ID NO:1289)  
5'-CCT GTT TTC TGT CTT CCT CT-3' (FRAG. NO:1280)(SEQ. ID NO:1290)  
5'-TTC CTC CTG TTT CTC CGT-3' (FRAG. NO:1281)(SEQ. ID NO:1291)  
5'-TTG GCT TGC TGC TTG CCG GGC TGT CTC C-3' (FRAG. NO:1282)(SEQ. ID NO:1292)  
5'-CTT GCC CCT GTG GGC TTT CCC-3' (FRAG. NO:1283)(SEQ. ID NO:1293)  
5'-TGG TCC GGT TGT CTC CTT GGG GGT C-3' (FRAG. NO:1284)(SEQ. ID NO:1294)  
5'-GCC CTT CTT GGT GGG CTG-3' (FRAG. NO:1285)(SEQ. ID NO:1295)  
5'-GCT CGT CTG TCT TTT TCC TTC C-3' (FRAG. NO:1286)(SEQ. ID NO:1296)  
5'-TGG GGG TGG CCG TTG TGG GCG GTG TGG TCC GCC T-3' (FRAG. NO:1287)(SEQ. ID NO:1297)  
5'-TGC CTC TGC TGG TCT TTC-3' (FRAG. NO:1288)(SEQ. ID NO:1298)

**Human Interleukin-1 (IL-1) Nucleic Acid and antisense Oligonucleotide Fragments**

5'-AAGCTTCTAC CCTAGTCTGG TGCTACACTT ACATTGCTTA CATCCAAGTG TGGTTATTTT TGTGGCTCCT GTTATAACTA  
TTATAGCACC AGGTCTATGA CCAGGAGAAT TAGACTGGCA TTAATCAGA ATAAGAGATT TTGCACCTGC AATAGACCTT  
ATGACACCTA ACCAACCCCA TTATTTACAA TAAACAGGA ACAGAGGGAA TACTTTATCC AACTCACACA AGCTGTTTTC  
CTCCAGATC CATGCTTTTT TCGTGTATT ATTTTGA GAATGGGGCT TCACTATGTT GCCCACACTG GACTAAAAC  
CTGGGCTCA AGTGATTGTC CTGCCTCAGC CTCCTGAATA GCTGGGACTA CAGGGGCATG CCATCACACC TAGTTCATTT  
CCTCTATTTA AAATATACAT GGCTTAAACT CCAACTGGGA ACCCAAAACA TTCATTTGCT AAGAGTCTGG TGTTCTACCA  
CCTGAAGTAG GCTGGCCACA GGAATTATAA AAGCTGAGAA ATCTTTAAT AATAGTAACC AGGCAACATC ATTGAAGGCT  
CATATGTAAT AATCCATGCC TTCCTTCTC CCAATCTCCA TTCCCAAAC TAGCCACTGG TTCTGGCTGA GGCCTTACGC  
ATACCTCCCG GGGCTTGAC ACACCTTCT CTACAGAAGA CACACCTTGG GCATATCTTA CAGAAGACCA GGCTTCTCTC  
TGGTCTTGG TAGAGGGCTA CTTTACTGTA ACAGGGCCAG GGTGGAGAGT TCTCTCTGA AGCTCCATCC CCTCTATAGG  
AAATGTGTTG ACAATATTCA GAAGAGTAAG AGGATCAAGA CTCTTTGTG CTCAAATACC ACTGTTCTCT TCTCTACCT  
GCCCTAACCA GGAGCTTGT ACCCCAAACT CTGAGGTGAT TTATGCCTTA ATCAAGCAAA CTTCCTCTT CAGAAAAGAT  
GGCTCATTTT CCTCAAAAG TTGCCAGGAG CTGCCAAGTA TTCTGCCAAT TCACCCTGGA GCACAATCAA CAAATTCAGC  
CAGAACACAA CTACAGCTAC TATTAGAAT ATTATTATTA ATAAATCTCT CTCAAATCT AGCCCTTGA CTTCGGATT  
CAGGATTTT CCTCTCTCC TAGAACTTG ATAAGTTTC CGCGCTTCCC TTTTCTAAG ACTACATGTT TGTCATCTTA  
TAAAGCAAG GGGTGAATAA ATGAACCAA TCAATAACT CTGGAATATC TGCAAAACAA AATAATATCA GCTATGCCAT  
CTTTCATAT TTAGCCAGT ATCGAGTTGA ATGAACATGA AAAATACAA AACTGAATTC TTCCCTGTAA ATTCCTCGTT  
TTGACGACGC ACTGTAGCC ACGTAGCCAC GCCTACTTAA GACAATTACA AAAGGCGAAG AAGACTGACT CAGGCTTAAG  
CTGCCAGCCA GAGAGGGAGT CATTTCATTG GCGTTTGTAGT CAGCAAAGGT ATTGTCTCTA CATCTCTGGC TATTAAGTA  
TTTTCTGTTG TTGTTTTTCT CTTTGGCTGT TTTCTCTCAC ATTGCTTCT CTAAAGCTAC AGTCTCTCT TCTTTTCTT  
GTCCCTCCCT GGTGTTGAT GTGACCTAGA ATTACAGTCA GATTTCAGAA AATGATTCTC TCATTTTGT GATAAGGACT  
GATTCGTTTT ACTGAGGAC GGCAGAACTA GTTCTCTATG AGGGCAGTGG TGAATACAAC TGAGGCTTCT CATGGGAGGG  
AATCTCTACT ATCCAAATTT ATTAGGAGAA AATTGAAAAT TTCCAATCT GTCTCTCT TACCTCTGT TAAGGCAAT  
ACCTTATTCT TGTGGTGT TTGTAACCTC TTCAAATTT CATTGATTGA ATGCCTGTT TGCAATACA TTAGGTTGGG  
CACATAAGGA ATACCAACAT AAATAAAACA TTCTAAAAGA AGTTTACGAT CTAATAAAGG AGACAGGTAC ATAGCAAAC  
AATCAAAGG AGCTAGAAGA TGGAGAAAAT GCTGAATGTG GACTAAGTCA TTCAACAAAG TTTTCAGGAA GCACAAAGAG  
GAGGGGCTCC CCTCACAGAT ATCTGGATTA GAGGCTGGCT GAGCTGATGG TGGCTGGTGT TCTCTGTTG AGAAGTCAAG  
ATGGCCAAAG TTCCAGACAT GTTTGAAGAC CTGAAGAACT GTTACAGGTA AGGAATAAGA TTTATCTCT GTGATTTAAT  
GAGGGTTTCA AGGCTACCA GAATCCAGCT AGGCATAACA GTGGCCAGCA TGGGGGCAGG CCGGCAGAGG TTGTAGAGAT  
GTGTACTAGT CTGAAGTCA GAGCAGGTT AGAGAAGACC CAGAAAACCT AAGCATTACG CATCTTAACT TGAGATTACA  
TTGGCAGGGA GACCGCCATT TTAGAAAAAT TATTTTGTAG GTCTGTGAG CCCTACATGA ATATCAGCAT CAACCTAGAC  
ACAGCCTCTG TTGAGATCAC ATGCCCTGAT ATAAGAATGG GTTTTACTGG TCCATTCTCA GGAACCTTG ATCTCATTCA  
GGAACAGGAA ATGGCTCCAC AGCAAGCTGG GCATGTGAAC TCACATATGC AGGCAAACT CACTCAGATG TAGAAGAAAG  
GTAATGAAC ACAAAGATAA AATTACGGAA CATATTAAC TAACATGATG TTTCCATTAT CTGTAGTAAA TACTAACACA  
AATAGGCTG TCAAAATTTT GCCTGGATAT TTTACTAAGT ATAAATTATG AAATCTGTT TAGTGAATAC ATGAAGATA  
TGTGTAACAT ATAATCTATT TGGTTAAAT AAAAAGGAAG TGCTTCAAAA CTTTCTTT CTCTAAAGGA GCTTAACATT  
CTTCCCTGAA CTTCATTAAG AGCTCTTCAA TTTGTTAGCC AAGTCCAATT TTTACAGATA AAGCAGAGT AAAGCTCAAA  
GCCTGTCTG ATGACTACTA ATTCCAGATT AGTAAGATAT GAATTACTCT ACCTATGTT ATGTGTAGAA GTCCTTAAAT  
TTCAAAGATG ACAGTAATGG CCAATGTGAT GTGTGTGACC CAAACTATC ATGGTCATTA AAGTACATTG GCCAGAGACC  
ACATGAAATA ACAACAATTA CATCTCATC ATCTTATTTT GACAGTGAAG ATGAAGAAGA CAGTTCCTCC ATTGATCATC

TGTCTCTGAA TCAGGTAAGC AAATGACTGT AATTCTCATG GGACTGCTAT TCTTACACAG TGGTTTCTTC ATCCAAAGAG  
AACAGCAATG ACTTGAATCT TAAATACTTT TGTTTTACCC TCACTAGAGA TCCAGAGACC TGTCTTTCAT TATAAGTGAG  
ACCAGCTGCC TCTCTAAACT AATAGTTGAT GTGCATTGGC TTCTCCAGA ACAGAGCAGA ACTATCCCAA ATCCCTGAGA  
ACTGGAGTCT CTGGGGCAG GCTTCATCAG GATGTTAGTT ATGCCATCCT GAGAAAGCCC CGCAGGCCCG TTCACCAGGT  
GTCTGTCTCC TAACGTGATG TGTGTGGTT GTTCTCTG ACACAGCAT CAGAGGTTAG AGAAAGTCTC CAAACATGAA  
GCTGAGAGAG AGGAAGCAAG CCAGCTGAAA GTGCAAGAGT TACAGCCACT CATCAATCTG TGTATTGTG TTTGGAGACC  
ACAAATAGAC ACTATAAGTA CTGCCTAGTA TGTCTTCAGT ACTGGCTTTA AAAGCTGTCC CCAAAGGAGT ATTTCTAAAA  
TATTTTGAGC ATTGTTAAGC AGATTTTAA CCTCCTGAGA GGGAACAAAT TGGAAAGCTA CCACTACTA CAATCATTGT  
TAACCTATTT AGTTACAACA TCTCATTTTT GAGCATGCAA ATAAATGAAA AAGTCTTCCT AAAAAATCA TCTTTTTATC  
CTGGAAGGAG GAAGGAAGGT GAGACAAAAG GGAGAGAGGG AGGGAAGCCT AATGAAACAC CAGTTACCTA  
AGACCAGAAT GGAGATCCTC CTCATACCT CTGTTGAATA CAGCACCTAC TGAAAGAACT TCACTTCCCT GACCATGAAC  
AGCCTCTCAG CTCTGTGTTT CCTTCTCAG AGAAATCCTT CTATCATGTA AGCTATGGCC CACTCCATGA AGGCTGCATG  
GATCAATCTG TGTCTCTGAG TATCTCTGAA ACCTCTAAAA CATCCAAGCT TACCTTCAAG GAGAGCATGG TGGTAGTAGC  
AACCAACGGG AAGGTTCTGA AGAAGAGACG GTTGAGTTTA AGCCAATCCA TCACTGATGA TGACCTGGAG GCCATCGCCA  
ATGACTCAGA GGAAGGTAAG GGGTCAAGCA CAATAATATC TTTCTTTTAC AGTTTAAAGC AAGTAGGGAC AGTAGAATTT  
AGGGGAAAAA TAAACGTGGA GTCAGAATAA CAAGAAGACA ACCAAGCATT AGTCTGGTAA CTATACAGAG GAAAAATTAAT  
TTTTATCCTT CTCCAGGAGG GAGAAATGAG CAGTGGCCTG AATCGAGAAT ACTTGCTCAG AGCCATTATT TCTTAGCCAT  
ATTGTAAGG TCGTGTGACT TTTAGCCTTT CAGGAGAAAAG CAGTAATAAG ACCACTTACG AGCTATTGTT CTCTCATACT  
AACTATGCCT CCTTGGTCAT GTTACATAAT CTTTTCTGTA TTCAGTTTTCC TCTACTGTAA AATGGAGATA ATCAGAAATCC  
CCCCTCATT GGATTGTTGT AAAGATTAAG AGTCTCAGGC TTTACAGACT GAGCTAGCTG GGCCCTCCTG ACTGTTATAA  
AGATTAATAG AGTCAACATC CCCTAACTTC TGGACTAGAA TAATGTCTGG TACAAAGTAA GCACCAATA AATGTTAGCT  
ATTACTATCA TTATTATTAT TATTTATTT TTTTTTTT AGATGGAGTC TGGCTCTGTC ACCCAGGCTG GAGTGACGTG  
GCACAATCTC GGCTCACTGC AAGCTCTGCC TCCTGGGTTC ATGCCATTCT CTGCCTCAG CCTCCCGAGT AAGCTGGGAA  
TACAGGCACC CGCCACTGTT CCGGCTAAT TTTTGTATT TTAGTAGAG ACGGAGTTTC ACCGTGGTCT CCATCTCCTC  
GTGATCCACC CACCTTGGCC TCCAAAAGTG CCGGATTAC AGCGGTGAGC CACCGCGCCC GGCCTATTAT TATTATTATT  
ACTACTACTA CTACCTATAT GAATACTACC AGCAATACTA ATTTATTAAT GACTGGATTA TGTCTAAACC TCACAAGAAT  
CCTACCTTCT CATTTTACAT AAAAGGAAAC TAAGCTCATT GAGATAGGTA AACTGCCCAA TGGCATACAT CTGTAAGTGG  
GAGAGCCTCA AATCTAATTC AGTTCATCT GAGTAAAAAA ATCATGGTTT CTCCTCCATC CCTTTACTGT ACAAGCCTCC  
ACATGAACATA TAAACCCAAT ATTCCTGTTT TTAAGATAAT ACCTAAGCAA TAACGCATGT TCACCTAGAA GGTTTAAAAA  
TGTAACAAAA TATAAGAAAA TAAAAATCAC TCATATCGTC AGTGAGAGTT TACTACTGCC AGCACTATG TATGTTTCTT  
TAAAATCTTT GCTATACACA TACCTACATG TGAACAAAATA TGCTAACAT CAAGACCACA CTATTACAA CTTTATATCC  
AGCTTTTCTT ACTTAGCAAT GTATTGAGGA CATTITAGAG TGCCCGTTT TCACCATTAT AAGCAATGCA ACAATGAACA  
TCTGTATAAA TAAATATTCA TTTCTCTCAG CTTTATTTC CTTAGAATAT ATTCCTAGAA GTAGAATTTC CCAGAGCCAT  
GAGGATTTGT GACGCTATTG ATATGTGCCA CTTTGCACTC TCTGTGACAT ATATAATTAT TTTAATGCA TTCATTTTTT  
TCTCAGAGTG CATTCTGTTG AAAACATAGA CGGGAAATAC TGGTAGTCTT CCTGTGCTAG TAGAAACACC CAAACAATGA  
AAAATGAAAA AGTTGCACAA ATAGTCTCTA AAAACAATGA AACTATTGCC TGAGGAATTG AAGTTTAAAA AGAAGCAGAT  
AAGCAACAAC AAGGATAATC CTAGAAAAACC AGTTCCTGCT AGTGGGTGAT TTCCTTCTC TTTGCTCTCT CATCTGATT  
GGAATATTCC TAATACCCCC TCCAGAACTA TTTTCCCTGT TTGTACTAGA CTGTGTATAT CATCTGTGTT GTACATAGA  
CATTAACTCT CACTTGTGAT CATGGTTTGA GAAATCATCA AGCCTAGGTC ATCACCTTTT AGCTTCTCTG GCAATGTGAA  
ATACAACTTT ATGAGGATCA TCAAATACGA ATTCATCCTG AATGACGCC TCAATCAAAG TATAATTGCA GCCAATGATC  
AGTACCTCAC GGCTGCTGCA TTACATAATC TGGATGAAGC AGGTACATTA AAATGGCACC AGACATTTCT GTCATCCTCC  
CCTCCTTCA TTTACTTATT TATTTATTTC AATCTTCTG CTGCAAAAA ACATACCTCT TCAGAGTTCT GGGTTGCACA  
ATTCTTCCAG AGTACTTGA AGCACAGCAC CCCCATAAAA ATCCCAAGCC AGGGCAGAAG GTTCAACTAA ATCTGGAAGT  
TCCACAAGAG AGAAGTTTCC TATCTTTGAG AGTAAAGGGT TGTGCACAAA GCTAGCTGAT GTACTACCTC TTTGTTTCTT  
TCAGACATTC TTACCCTCAA TTTTAAACT GAGGAACTG TCAGACATAT TAAATGATTT ACTCAGATTT ACCCAGAAGC  
CAATGAAGAA CAATCACTCT CCTTAAAAA GTCTGTTGAT CAACTCACA AGTAACACCA AACCAGGAAG ATCTTTATTA  
TCTCTGATAA CATATTTGTG AGGCAAAACC TCCAATAAGC TACAAATATG GCTTAAAGGA TGAAGTTTAG TGCCAAAAA  
CTTTTATCAC ACACATCCAA TTTTCATGGC GGACATGGTT TAGTTTCAAC AGTATACATA TTTTCAAAGC TCCAGAGAGG  
CAATTTTGCA ATAAACAAGC AAGACTTTTT CTGATTGGAT GCCTTCAAGC TAACATGCTT TCACTCTAC ATTTACAAAT  
TATTTTGTGT TCTATTTTT TACTTAATAT TATTTCTGCA ATTTTCCCAA TATTGACATC GTGTATGAT TTTGCCATTTT  
TAATATCACT AGACAATTCA ATCAGGTTGC TACGTTGGTC CCTTGGGTTT ACTCTAAATA GCTTGATTGC AAATATCTTT  
GTATATATTA TTGTTTTTTC TCCTATCTTG TAATTTCTTT GAGCACATCC CAAAGAGGAA TGCCTAGATC AATGGGCACA  
AATAATTTGA CAGCTCTTAT TAAACATTAT TCTGTAAGTA AAAACTGAAC TACTTTTCAG TATCACTAGC AACATATGAG  
TGTATCAGCT TCCTAAACCC CTCCATGTTA GGTCAATTAT AACTTATGAT CTAACAAAT ACAGGGTCTT ATCCCACTAA  
TGAAATTATA AGAGATTCAA CACTTATTCA GCCCGAAGG ATTCATTCAA CGTAGAAAAT TCTAAGAACA TTAACCAAGT  
ATTTACCTGC CTAGTGAGTG TGAAGACAT TGTGAAGGAC ACAAGAGATG ATAGAATTCC ATTCCTGACT TCCAGGTATT  
TACACCATAG GTGGGGACCT AACTACACAC ACACACACAC ACACACACAC ACCATGCACA CACAATCTAC  
ATCAACACTT GATTTTATAC AAATACAATG AATTTACTTT CTTTTTGGTT CTCTCTTCA CCAGTGAAAT TTGACATGGG  
TGCTTATAAG TCATCAAAGG ATGATGCTAA AATTACCGTG ATTCTAAGAA TCTCAAAAAC TCAATTGTAT GTGACTGCCC  
AAGATGAAGA CCAACCAGTG CTGCTGAAGG TCAGTTGTCC TTTGTCTCCA ACTTACCTTC ATTTACATCT CATATGTTT  
TAAATAAGCC CAATAGGCAG ACACCTCTAA CAAGGTGATC GTGCTCTCTT TCCTTCTAC CACAGCCCCC ACCTACCCAC  
CCCACTCCCA TTGATTCCAG AGCGTGCTT AGGAGGATC TATGAGAAAA TATAACAGAG AGTAAGAGGA AATTAACCTT  
CTTTCTTTTT CTTTTCCCTG CCTGACCTTA TTCACCTCCC ATCCAGAGC ATCCATTTAT TCCATTGATC TTTACTGACA  
TCTATTATCT GACCTACACA ATACTAGACA TTAGGACAAT GTGGCCTGCC TCCAAGAAAC TCAAATAAGC CAACTGAGAT  
CAGAGAGGAT TAATCACTG CCAATGGGCA CAAAGCAACA AGCTGGGAGC CAAGTCCCAA AATGGGGCCT GCTGCTTCCA  
GTTCCTCTCT CTCTGCATTG ATGTCAGCAT TATCTTCTG CCCAGTCTG TCTCCACTAC CACTTTCCCC CTCAAACACA  
CACACACACA ACAGCCTTAG ATGTTTTCTC CACTGATAAG TAGGTGACTC AATTTGTAAG TATATAATCC AAGACCTTCT  
ATCCCAAGT AGAATTTATG TGCTGCTG TGCTTTCTA CTTGGATCAA GTGATGTCTA CAGAGTAGGG CAGTAGCTTC  
ATTCATGAAC TCATTCAACA AGCATTATTC ACTGAGAGCC TTGATTTTT CAGGCATAGT GCCAACAGCA GTGTGGACAG



TGGTGCATCA AAGCCTCTAG TCTCATAGAA CTTAGTCTTC TGGAGGATAT GGAAAAACAGA CAACCCAAAC AACCAACAAA  
AGAGCAAGAT GCTGCAAAAA AAAAAAAT GAATAGGGTG CTAAGATAGA GAAAAGTGGG AGAGTGCTAT  
TTAGACAAAG TGGTAAAAAC AAAGCCCCCTT GTGAGATGAG AGCTGCCGAC AGAGGGGGCG GGTCTAGGTT GTGGGTTTTT  
GGGTAGGACA TTCAGAGGAG GGGGCGGGTC GTGGTTGTGG GTTTTGGGT AGGACATTCA GAGGAGGGGG CGGGTCGTGG  
TTGTGGGTTT TTGGGTAGGA CATTGAGAGG AGGGGGCGGG TCGTGGTTGT GGGTTTTTGG GTAGGACATT CAGAGGAGGG  
GGCGGGTCGT GGTGTGGGT TTTTGGGACA TTCAGAGGAG TCTGAATGCA CCCAGGCCA CAACCTCAAG ATGGTAAAGG  
ACAGCTCCAA GGATCAGAAG AAGCATTCTT GGAACCTGGG CATTGTGAGA AGGAGGAAAA ATATGCAGAG ACTAGTGCTT  
GCAGAGCTTG CATTGATT TCATTGAGG TACAATGAAA ACCCATTAAT GGGTTTCACA CAGTGAATG GCCTGACCTC  
ACTTATATTT CCTAAATAG AAAACAGATC AGAAGGAAGG CAATAGAGAA GCAGAAAGTC CAATGAGGAG GTTTCACAGC  
AGTCATGGGG GTGGGGTAAG GAAAAGAAGT GGAAGAAAC AGACAGAATT GGGTTATATT TTGGAGATAG AACCAACAGA  
AGGAAGAGGA GAAACAACAT TTAAGTGAAG GGGAAAAAT AGGAGAGGAA TAGGTTTGGG AAATAAATCC TGCTGACATT  
GGAACCCCA AGGAAGCCTC AAAAGTATAT TTAAGTCTT TAGATTTAAA AGAATAGGAA AGAAGCATCT CAACCTGGAA  
TTTGAATCT ATTTTCCAT AAAAGTATTG TAAATTTCTA CTAATGCTCA CAAGAAAAAT ACTTCTAA GAGTATATTG  
AAAGAGTTTA CTGATATACT TAGGAATTTT GTGTGTATGT GTGTGTGTGT ATGTGTGTGT GTGTGTTTAA CCTTCAATTG  
TTGACTTAAA TACTGAGATA AATGTCATCT AAATGCTAAA TTGATTTCCT AAAGGTATGA TTTGTTCACT TGGAGATCAA  
AATGTTTAGG GGGCTTAGAA TCACTGTAGT GCTCAGATT GATGCAAAAT GTCTTAGGCC TATGTTGAAG GCAGGACAGA  
AACAATGTT CCTCCTACC TGCCTGGATA CAGTAAGATA CTAGTGTAC TGACAATCT CATACTAAT TTAGATCTCT  
CTCAATCAA CTAAGGAAAT CAACCTTAT TAATAGACTG GGCCACACAT CTAAGGCA IGTAATAAAT GCTTGCTGAA  
TGAACAAATG AATGAAGAGC CTATAGCATC ATGTTACAGC CATAGTCTTA AGTGGTGT TCTCATGAAG GCCAAATGCT  
AAGGGATTGA GCTTCAGTCC TTTTCTAAC ATCTGTCTT CTAACAGAAT TCTCTCTT TCTTCATAGG AGATGCTGTA  
GATACCCAAA ACCATCACAG GTAGTGAGAC CAACCTCTC TTCTCTGGG AAACCTCACGG CACTAAGAAC TATTCACAT  
CAGTTGCCCA TCCAACTTG TTTATTGCCA CAAAGCAAGA CTAAGGGTG TGCTTGCCAG GGGGGCCACC CTCTATCACT  
GACTTTCAGA TACTGAAAA CCAGGCGTAG GTCTGGAGTC TCACTGTCT CACTTGTGCA GTGTGACAG TTCATATGTA  
CCATGTACAT GAAGAAGCTA AATCCTTAC TGTTAGTCT TTGCTGAGCA TGTACTGAGC CTGTGAATTC TAAATGAATG  
TTTACACTCT TTGTAAGAGT GGAACCAACA CTAACATATA ATGTTGTAT TAAAGAACA CCTATATT TGCATAGTAC  
CAATCATTTT AATTATTATT CTTCATAACA ATTTTAGGAG GACCAGAGCT ACTGACTATG GCTACAAAA AGACTTACC  
CATATTACAG ATGGGCAAT TAAGGCATAA GAAACTAAG AAATATGCAC AATAGCAGTT GAAACAAGAA GCCACAGACC  
TAGGATTTC TGAATTCATT TCAACTGTTT GCCTCTGCT TTAAGTTGC TGATGAATC TTAATCAAAT AGCATAAGTT  
TCTGGGACCT CAGTTTATC ATTTTCAAAA TGGAGGGAAT AATACCTAAG CCTTCTGCC GCAACAGTTT TTTATGCTAA  
TCAGGGAGGT CATTTGGTA AAATCTTCT CGAAGCCGAG CCTCAAGATG AAGGCAAAGC ACGAAATGTT ATTTTAAAT  
TATTATTAT ATATGTATT ATAAATATAT TAAAGTAT TAAATATAC TATATTATG GGAACCCCTT CATCTCTGA  
GTGTGACCAG GCATCTTCCA CAATAGCAGA CAGTGTTC TGGTAAGT TGAATGATT TCATTAAGT AGGGCATTTT  
GGTCCAAGTT GTGCTTATCC CATAGCCAGG AAACCTGCA TTCTAGTACT TGGGAGACCT GTAATCATAT AATAAATGTA  
CATTAAATAC CTGAGCCAG TAATTTGGTCC GATCTTTGAC TCTTTGCCA TAAACTTAC CTGGGCATTC TTGTTTCAAT  
CAATTCACAC TGCAATCAAG TCTACAAGC TAAATTTAGA TGAATCAAC TTTGACAACC ATGAGACCAC TGTATCAAA  
ACTTCTCTT CTGGAATGTA ATCAATGTTT CTCTAGGT CTAAGAAATG TGATCAGACC ATAATGTTAC ATTATTATCA  
ACAATAGTGA TGTATAGAGT GTTATCAGTC ATAACATAAT AAAGCTTGCA ACAAATTC CTGACACATA GTTATTCATT  
GCCTTAATCA TTATTTTACT GCATGGTAAT TAGGGACAAA TGGTAAATGT TTACATAAAT TATGTATTAT GTTGTACTT  
TATAAATCA AACCAAGATT TTATATTTT TTCTCTCTT TGTTAGCTGC CAGTATGCAT AAATGGCATT AAGAATGATA  
ATATTTCCGG GTTACTTAA AGCTCATATT ACACATACAC AAAACATGTG TTCCCATCTT TATACAACT CACACATACA  
GAGCTACATT AAAACAACCT AATAGGCCAG GCACGGTGGC TCAGACCTGT AATCCCAGCA CTTGGGGAGG ACCAACCCTT  
TCGAGGCACA AGGCACAACA GGCTGCTCTG GGATCTCTT CAGCCAATCT TCATTGCTCA AGTGTCTGAA GCAGCCATGG  
CAGAAGTACC TGAGCTCGCC AGTGAAATGA TGGCTTATTA CAGTGCAAT GAGGATGACT TGTCTTTGA AGCTGATGGC  
CCTAACAGA TGAAGTGCTC CTTCACAGGAC CTGGACCTCT GCCTCTGGA TGGCGGCATC CAGTACGAA TCTCCGACCA  
CCACTACAGC AAGGGCTTCA GGCAGGCCGC GTCAGTTGTT GTGGCCATGG ACAAGCTGAG GAAGATGCTG GTTCCCTGCC  
CACAGACCTT CCAGGAGAAT GACCTGAGCA CTTCTTTCC CTTCATCTT GAAGAAGAAL CTATCTCTT CGACACATGG  
GATAACGAGG CTTATGTGCA CGATGCACCT GTACGATCAC TGAATGCA GCTCCGGGAC TCACAGCAAA AAAGCTTGGT  
GATGTCTGTT CCATATGAAC TGAAGCTCT CCACCTCAG GGCAGGATA TGGAGCAACA AGTGGTGT TCCATGTCTT  
TTGTACAAGG AGAAGAAAGT AATGACAAAA TACCTGTGGC CTTGGCCCTC AAGGAAAAA ATCTGTACTT GTCTGCGTG  
TTGAAAGATG ATAAGCCAC TCTACAGCTG GAGAGTGTAG ATCCAAAAA TTACCCAAAG AAGAAGATGG AAAGCGATT  
TGTCTTCAAC AAGATAGAAA TCAATAACA GCTGGAATTT GAGTCTGCC AGTTCCCAA CTGCTACATC AGCACCTCTC  
AAGCAGAAAA CATGCCCTG TTCTGGGAG GACCAAGG CGGCCAGGAT ATAAGTACT TCACATGCA ATTTGTCTT  
TCTAAAGAG AGCTGTACCC AGAGAGTCT GTGCTGAATG TGGACTCAAT CCTAGGGCT GGCAGAAAGG GAACAGAAAG  
GTTTTTGTAGT ACGGCTATAG CTTGACTTT CTTGTGTCT ACACCAATGC CCAACTGCCT GCCTTAGGGT AGTGCTAAGA  
GGAATCTCTG TCCATCAGCC AGGACAGTCA GCTCTCTCT TTAGGGGCA ATCCCGAGCC CTTTGTGTA GCGAGGCTC  
TCTCACCTCT CTAAGTACT TAAAGCCGCG CTGACAGAAA CCACGGCCAC ATTTGTTCT AAGAAACCT CTGTCTCTG  
CTCCACATT CTGATGAGCA ACCGCTTCCC TATTTATTA TTTATTTGTT TGTGTTTIT ATTATTGGT CTAATTTATT  
CAAAGGGGGC AAGAAGTAGC AGTGTCTGTA AAGAGCCTA GTTTTAAATA GCTATGGAAT CAATTCAAT TGGACTGGTG  
TGCTCTCTT AAATCAAGTC CTTAATTTA GACTGAAAA ATATAAGCTC AGATTATTTA AATGGGAATA TTTATAAATG  
AGCAATATC ATACTGTTCA ATGGTCTGA AATAACITC TCTGAAG AGAAAGAAAG AGAGAGAGAA AGAAAGAAAG  
AGGAAGGAA GGAAGGAAG AAGAAAGCA GGCTGTGAGG AAGGTGGCAG TTCTTACA GGGGAACCA  
GTGGTTAATT TGCAAGTGG ATCTGTGGA GGCANNAGA GAGTCCCT AGGCCACCA GACAGGGCTT TTAGCTATCT  
GCAGGCCAGA CACCAATTT CAGGAGGGCT CAGTGTAGG AATGGATTAT GGCTTATCAA ATTCACAGGA AACTAACATG  
TTGAACAGCT TTAGATTTC CTGTGAAAA TAAACTTAC TAAAGATGGA GTTCTGTGA CTGACTCTG ATATCAAGAT  
ACTGGGAGCC AAATTAATAA TCAAGAGCT GTTGGAGAG CAAGTCCATG AAATGCTCT TTCCACAG TAGAACCTAT  
TTCCCTCGTG TCTCAATAC TTGCACAGAG GCTCACTCC TGGATAATG CAGAGCGAGC ACGATACCTG GCACATACTA  
ATTTGAATAA AATGCTGTCA AATCCCATC CACCATTTA AAGCAAAAC TCTATCTAC CTGAATGTAC ATGCCAGGCA  
CTGTGCTAGA CTGTCTCA AAAGATTTC GCTTCTGGA GGAACAGGA GGGCAAGGT TCAACTCAGT GCTATAAGAA  
GTGTACAGG CTGACACAG TGGCTACGC CTGAATCCC AACAATTGGG AGGCCAGGC GGCAGATCA CAAGGTGAG

AGATCGAGAC CATCCTGGCT AACATGGTGA AACCTGTCT CTAATAAAAA TACAAAAAAT TAGCCGGGCG TTGGCGGCAG  
GTGCCCTGTAG TCCCAGCTGC TGGGGAGGCT GAGGCAGGAG AATGGTGTGA ACCCGGGAGG CGGAACCTGC AGGGGGCCGA  
GATCGTGCCA CTGCACTCCA GCCTGGGCGA CAGAGTGAGA CTCTGTCTCA AAAAAAAAAA AAAAGTGTTA TGATGCAGAC  
CTGTCAAAGA GGCAAAGGAG GGTGTTCTA CACTCCAGGC ACTGTTTATA ACCTGGACTC TCATTCATTC TACAAATGGA  
GGGCTCCCT GGGCAGATCC CTGGAGCAGG CACTTTGCTG GTGTCTCGGT TAAAGAGAAA CTGATAACTC TTGGTATTAC  
CAAGAGATAG AGTCTCAGAT GGATATTCTT ACAGAAACAA TATTCCTACT TTTCAGAGTT CACCAAAAAA TCATTTTAGG  
CAGAGCTCAT CTGGCATTGA TCTGGTTCAT CCATGAGATT GGCTAGGGTA ACAGCACCTG GTCTTGACAG GTTGTGTGAG  
CTTATCTCCA GGGTTGCCCC AACTCCGTCA GGAGCCTAGG CCCTGCATAC CGTATGTTCT GTGCCCAAGC CAAGAAAGGT  
CAATTTTCTC CTCAGAGGCT CCGCAATTG ACAGAGAGCT CCCGAGGCAG AGAACAGCAC CCAAGGTAGA GACCCACACC  
CTCAATACAG ACAGGGAGGG CTATTGGCCC TTCATTGTAC CCATTTATCC ATCTGTAAGT GGGAAAGATC CTAAACTTAA  
GTACAAAGAA GTGAATGAAG AAAAGTATGT GCATGTATAA ATCTGTGTGT CTCCCACTTT GTCCACATA TACTAAATTT  
AAACATTCTT CTAACGTGGG AAAATCCAGT ATTTTAAATGT GGACATCAAC TGCACAACGA TTGTACAGGA AACAATGCAT  
ATTTGCATGG TGATACATTT GCAAAATGTG TCATAGTTTG CTACTCTTG CCCTTCCATG AACCAGAGAA TTATCTCAGT  
TTATTAGTCC CTTCCCTTAA GAAGCTTCCA CCAATACTTT TTTCCTTTT CTTTAACTT GATTGTGAAA TCAGGTATTC  
AACAGAGAAA TTCTCAGCC TCCTACTTCT GCTTTTGAAG GCTATAAAAA CAGCGAGGGA GAAACTGGCA GATACCAAAAC  
CTCTTCGAGG CACAAGGCAC AACAGGCTGC TCTGGGATTC TCTTCAGCCA ATCTTCATTG CTCAAGTATG ACTTTAATCT  
TCCTTACAAC TAGGTGCTAA GGGAGTCTCT CTGTCTCTCT GCCTCTTGT GTGTATGCAT ATTCTCTCTC TCTCTCTCT  
TCTTCTCTG TCTCTCTCT CTTCTCTCT TGCTCTCTCT CTCAGCTTTT TGCAAAAAATG CCAGGTGTAA TATAATGCTT  
ATGACTCGGG AAATATTCTG GGAATGGATA CTGCTTATCT AACAGCTGAC ACCCTAAAGG TTAGTGTCAA AGCCTCTGCT  
CCAGCTCTCC TAGCCAATAC ATTGCTAGTT GGGGTTTGGT TTAGCAATAG CTTTCTCTA GACCCAAAGC ACTTCTCTT  
CACACATTCA TTCATTACT CAGAGATCAT TTCTTTGCTG GACTGCCATG CACTGGATGC TGAGAGAAAT CACACATGAA  
CGTAGCCGTC ATGGGGAAGT CACTCATTTT CTCTTTTTA CACAGGTGTC TGAAGCAGCC ATGGCAGAAG TACCTGAGCT  
CGCCAGTGAA ATGATGGCTT ATTACAGGTC AGTGGAGACG CTGAGACCAG TAACATGAGC AGGTCTCTCT TTTCAAGAGT  
AGAGTGTAT CTGTGCTTG AGACCAGATT TTCCCTTAA ATGCTCTCT TCAGTGGCAA ACAGGGTGCC AAGTAAATCT  
GATTAAAGA CTACTTTCCC ATTACAAGTC CCTCCAGCCT TGGGACCTGG AGGCTATCCA GATGTGTTGT TGCAAGGGCT  
TCTGTCAGAG GCAAAATGGG AGAAAAGATT CCAAGGCCAC AATACAAGGA ATCCCTTTG AAAGTGTGGC TTGGAGGGAG  
AGGGAGAGCT CAGATTTTAG CTGACTCTGC TGGGCTAGG TTAGGACCTC AAGATCCAAC AGGGAGCAGC AGGGAGCCCA  
CCTGCCAGGC CTAGAATCTG CCTTCTGGAC TGTCTGCGC ATATCACTGT GAAACTTGCC AGGTGTTTCA GGCAGCTTG  
AGAGGCAGGC TGTGTCAGT TTCTATGAA CAGTCAAGTC TTGTACACAG GGAAGGAAAA ATAAACCTGT TTAGAAGACA  
TAATGAGAC ATGTCCCTGT TTTTATTACA GTGGCAATGA GGATGACTTG TTCTTTGAAG CTGATGGCCC TAAACAGATG  
AAGGTAAGAC TATGGGTTTA ACTCCCAACC CAAGGAAGGG CTCTAACACA GGGAAAGCTC AAAGAAGGGA GTTCTGGGCC  
ACTTTGATGC CATGTAATT TGTTTTAGAA AGACTTAAAC TGTTCAGT GAGACACAGG CTGCAACCT TGCTGACCTG  
GCCACTTGGT CATGATATCA CCACAGTCA TCATAACGT TGCTTGTTGT GGCCACACTT GGTGGTGACA GGGAGGAGT  
AGTGATAATG TTCCATTTC ATAGTAGGAA GACAACCAAG TCTTCAACAT AAATTTGATT ATCTTTTAA GAGATGGATT  
CAGCCTATGC CAATCACTTG AGTTAAACTC TGAAACCAAG AGATGATCTT GAGAACTAAC ATATGTCTAC CCCTTTTGAG  
TAGAATAGTT TTTTGCTACC TGGGGTGAAG CTTATAACAA CAAGACATAG ATGATATAAA CAAAAAGATG AATTGAGACT  
TGAAAGAAAA CCATTCACTT GCTGTTTGAC CTTGACAAGT CATTTTACCC GCTTTGGACC TCATCTGAAA AATAAAGGGC  
TGAGCTGGAT GATCTCTGAG ATTCCAGCAT CCTGCAACCT CCAGTTCTGA AATATTTTCA GTTGTAGCTA AGGGCATTTG  
GGCAGCAAT GGTCAATTTT CAGACTCATC TTTACAAGA GGCATGTTAT ATTCTGCTG TCCCTCTGT TTTATATGAT  
GCTCAGTAGC CTTCTAGGT GCCAGCCAT CAGCCTAGCT AGGTCACTTG TGCAGGTTGG AGGCAGCCAC TTTTCTCTG  
CTTTATTTTA TTCCAGTTTG TGATAGCCTC CCCTAGCCTC ATAATCCAGT CCTCAATCTT GTTAAAAACA TATTTCTTTA  
GAAGTTTAA GACTGGCATA ACTTCTTGGC TGCAGCTGTG GGAGGAGCCC ATTGGCTTGT CTGCCTGGCC TTTGCCCCCC  
ATTGCTCTT CCAGCAGCTT GGCTCTGCTC CAGGCAGGAA ATTCTCTCT GCTCAACTTT CTTTGTGCA CTTACAGGTC  
TCTTTAACTG TCTTTCAAGC CTTTGAACCA TTATCAGCT TAAGGCAACC TCAGTGAAGC CTTAATACGG AGCTTCTCTG  
AATAAGAGGA AAGTGGTAAC ATTTGACAAA AACTACTCTC ACAGGATTTG CAGAATGCTT ATGAGACAGT GTTATGAAAA  
AGGAAAAAAA AGAACAGTGT AGAAAAATG AATACTTGCT GAGTGAGCAT AGGTGAATGG AAAATGTTAT GGTCATCTGC  
ATGAAAAAGC AAATCATAGT GTGACAGCAT TAGGGATACA AAAAGATATA GAGAAGGTAT ACATGTATGG TGTAAGTGGG  
GCATGTACAA AAAGATGACA AGTAGAATCG GGATTTATTC TAAAGAATAG CCTGTAAGGT GTCCAGAAGC CACATTCTAG  
TCTTGAGTCT GCCTCTACCT GCTGTGTGCC CTTGAGTACA CCTTAACTC CTTGAGCTT CAGAGAGGGA TAATCTTTT  
ATTTATTTT ATTTATTTT GTTTGTTTT GTTTGTTTT GTTTATGAG ACAGAGTCTC ACTCTGTTG CCAGGCTGGA  
GTGCAGTGGT ACAATCTTGG CTTACTGCAT CCTCCACTC CTGAGTTCAA GCGATTCTC TTCTCTAGC TCCTGAATAG  
CTAGGATTAC AGGTGCACCC CACCACACC AGCTAATTTT TGTATTTTA GTAGAGAAGG GGTTTCGCCA TGTGCGCCAG  
GCTGGTTTTG AAGTCTGAC CTAATGATT CATCCACTC GGCTTCCAA AGTGCTGGGA TTACAGGCAT GAGCCACCAC  
GCCTGGCCCA GAGAGGGATG ATCTTTAGAA GCTCGGGATT CTTTCAAGCC CTTCTCTCT CTCTGAGCTT TCTACTCTC  
GATGTCAAAG CATGGTTCTT GGCAGGACCA CCTCACCAGG CTCCCTCCCT CGCTCTCTC GCAGTGCTC TTCCAGGACC  
TGGACCTCTG CCTCTGGAT GCGGCGATCC AGCTACGAAT CTCCGACCAC CACTACAGCA AGGGCTTACG GCAGGCCGCG  
TCAGTTGTTG TGGCATGGA CAAGCTGAGG AAGATGCTGG TTCCCTGCC ACAGACCTTC CAGGAGAATG ACCTGAGCAC  
CTTCTTTCCC TTTCATCTTG AAGAAGGTAG TTAGCCAAGA GAGGCGAGTA GATCTCCACT TGTGCTCTC TGGAAGTCAT  
CAAGCCCCAG CCAACTCAAT TCCCCAGAG CCAAAGCCCT TTAAGGTAG AAGGCCAGC GGGGAGACAA AACAAAGAAG  
GCTGGAACC AAAGCAATCA TCTTTTAGT GGAACTATT CTTAAAGAAG ATCTTGATGG CTACTGACAT TTGCAACTCC  
CTACTCTTT CTCAGGGGCC TTTCATTAC ATTGTACCA GAGGTTCGTA ACCTCCTGT GGGCTAGTGT TATGACCATC  
ACCATTTTAC CTAAGTAGCT CTGTTGCTG GCCACAGTGA GCAGTAATAG ACCTGAAGCT GGAACCCATG TCTAATAGTG  
TCAGGTCCAG TGTTCTTAGC CACCCACTC CCAGCTTAT CCCTACTGGT GTTGTATCA GACTTGTACC GTATATGCTC  
AGGTGCTCTC CAAGAAATCA AATTTTGCCA CTCGCTGCA CGAGGCTGC CTTCTGATT TTATACCTA ACAACATGTG  
CTCCACATTT CAGAACCCTAT CTTCTCGAC ACATGGGATA ACAGGCTTA TGTGCACGAT GCACCTGTAC GATCACTGAA  
CTGCACGCTC CGGACTCAC AGCAAAAAAG CTTGGTGATG TCTGGTCCAT ATGAACTGAA AGCTCTCCAC CTCCAGGGAC  
AGGATATGGA GCAACAAGGT AAATGGAAAC ATCTGTTTT CCTGCTGG CCTCTGGCA GCTTGCTAAT TCTCATGTT  
TTAAACAAAG TAGAAAGTTA ATTTAAGGCA AATGATCAAC ACAAGTGAAG AAAAATATTA AAAAGGAATA TACAACTTT  
GGTCTAGAA ATGGCATT TGATTGCACT GGCCAGTGCA TTTGTTAACA GGAGTGTGAC CCTGAGAAAT TAGACGGCTC

AAGCACTCCC AGGACCATGT CCACCCAAGT CTCTGGGCA TAGTGCAGTG TCAATTCTTC CACAATATGG GGTCAATTGA  
TGGACATGGC CTAAGTGCCT GTGGGTCTC TCTTCTGTT GTTGAGGCTG AAACAAGAGT GCTGGAGCGA TAATGTGTCC  
ATCCCCCTCC CCAGTCTTCC CCCCTTGCCC CAACATCCGT CCCACCCAAT GCCAGGTGGT TCCTGTAGG GAAATTTTAC  
CGCCACGAG GAACTTATAT CTCTCCGCTG TAACGGGCAA AAGTTTCAAG TCGGTGAAC CCATCATTAG CTGTGGTGAT  
CTGCTGGCA TCGTGCCACA GTAGCCAAAG CCTCTGCACA GGAGTGTGGG CAACTAAGGC TGCTGACTTT GAAGGACAGC  
CTCACTCAGG GGAAGCTAT TTGCTCTCAG CCAGGCCAAG AAAATCCTGT TTCTTTGGAA TCGGGTAGTA AGAGTGATCC  
CAGGGCTCC AATTGACACT GCTGTGACTG AGGAAGATCA AAATGAGTGT CTCTCTTGG AGCCACTTTC CCAGCTCAGC  
CTCTCTCTC CCAGTTTCTT CCCATGGGCT ACTCTGTGT CCTGAAACAG TTCTGGTGCC TGATTTCTGG CAGAAGTACA  
GCTTCACTC TTCTCTTCC TTCCACATTG ATCAAGTTGT TCCGCTCTG TGGATGGGCA CATTGCCAGC CAGTGACACA  
ATGGCTTCTT TCCTCTCTC CTTCAGCATT TAAAATGTAG ACCCTCTTC ATTCTCCGT CTACTGCTA TGAGGCTCTG  
AGAAACCTC AGGCCTTTGA GGGGAAACCC TAAATCAACA AAATGACCTT GCTATTGTCT GTGAGAAGTC AAGTTATCCT  
GTGTCTTAG CCAAGGAACC TACTGTGGG TTCCACAGA GGCTACCAAT TACATGTATC TACTCTCGG GGCTAGGGGT  
TGGGTGACC CTGATGCTG TGTCCCTAAC CACAAGACCC CCTTCTTCT TCAGTGGTGT TCTCCATGTC CTTTGTACAA  
GGAGAAGAAA GAATGACAA AATACCTGTG GCCTTGGGCC TCAAGGAAAA GAATCTGTAC CTGCTCGG TGTTGAAAGA  
TGATAAGCCC ACTCTACAGC TGGAGGTAAG TGAATGCTAT GGAATGAAGC CCTTCTCAGC CTCTGCTAC CACTTATCC  
CAGACAATTC ACCTTCTCCC CGCCCCATC CTTAGGAAAA GCTGGGAACA GGTCTATTG ACAAGTTTTG CATTAAATGA  
AATAAATTTA ACATAATTTT TAACTGCGTG CAACCTTCAA TCTGTCTGCA GAAAATTTAA TCATTTTGCC GATGTTATTA  
TGCTCTACCA TAGTTACAAC CCAACAGAT TATATATTGT TAGGGCTGCT CTCAATTTGAT AGACACCTTG GGAATAGAT  
GACTTAAAGG GTCCCATAT CACGTCCACT CCATCCCAA AATCACCACC ACTATCACCT CCAGCTTTCT CAGCAAAAGC  
TTCAATTTCA AGTTGATGTC ATTCTAGGAC CATAAGGAAA AATAACAATA AAAGCCCCTG GAACTAGGT ACTTCAAGAA  
GCTCTAGCTT AATTTTACC CCCCCAAAA AAAAAAATTC TCACCTACAT TATGCTCTC GAACTTTGGC ACTAAGTTTT  
AGAAAAGAAG AAGGGCTCTT TTAATAATCA CACAGAAAGT TGGGGGCCCA GTTACAACCT AGGAGTCTGG CTCTGATCA  
TGTGACCTGC TCGTCAGTTT CTTTCTGGC CAACCAAAAG AACATCTTTC CCATAGGCAT CTTTGTCCCT TGCCCCACAA  
AAATCTTCTT TTCTTTTCG CTGCAGAGTG TAGATCCCAA AAATTACCCA AAGAAGAAGA TGGAAAAGCG ATTTGTCTTC  
AACAAGATAG AAATCAATAA CAAGCTGGAA TTTGAGTCTG CCCAGTTCCC CAACTGGTAC ATCAGCACCT CTCAAGCAGA  
AAACATGCCC GTCTTCTGG GAGGGACCAA AGCGGCCAG GATATACTG ACTTCACCAT GCAATTTGAG TCTTCTTAA  
GAGAGCTGTA CCCAGAGAGT CCTGTGCTGA ATGTGGACT AATCCCTAGG GCTGGCAGAA AGGGAACGAA AAGTTTGTG  
AGTACGGCTA TAGCCTGGAC TTCTCTGTG TCTACACCAA TGCCCAACTG CTGCTTAG GGTAGTGCTA AGAGGATCTC  
CTGTCCATCA GCCAGGACAG TCAGCTCTCT CTTTCAGGG CCAATCCCCA GCCCTTTGT TGAGCCAGGC CTCTCTACC  
TCTCTACTC ACTTAAAGCC CGCTGACAG AAACCACGGC CACATTTGGT TCTAAGAAAC CCTCTGTCAT TCCTCCAC  
ATTCTGATG GCAACCGCTT CCTATTTAT TTATTTATTT GTTTGTTTGT TTTGATTCTT TGGTCTAATT TATTCAAAGG  
AGGCAAGAAG TAGCAGTGTG TGTAAGAGAG CTTAGTTTAT AATAGCTATG GAATCAATTC AATTTGGACT GGTGTGCTCT  
CTTAAATCA AGTCTTTAA TTAAGACTGA AAATATATAA GCTCAGATTA TTTAAATGGG AATATTTATA AATGAGCAAA  
TATCATACTG TTCAATGGTT CTGAAATAAA CTCTACTGAA GAAAAAATAA AAAGGGTCTC TCCTGATCAT TGACTGTCTG  
GATTGACACT GACAGTAAGC AAACAGGCTG TGAGAGTTCT TGGGACTAAG CCCACTCTC ATTGTGAGT GCTGCAAGTA  
CCTAGAAATA TCCTTGGCCA CCGAAGACTA TCCTCTCAC CCATCCCCCT TATTTCTGTG TTCAACAGAA GGATATTCAG  
TGCACATCTG GAACAGGATC AGCTGAAGCA CTGCAGGAG TCAGGACTGG TAGTAACAGC TACCATGATT TATCTATCAA  
TGCACCAAC ATCTGTTGAG CAAGCGCTAT GTACTAGGAG CTGGGAGTAC AGAGATGAGA ACAGTACAAA GTCCCTCTC  
AGATAGGAGA GGCAGCTAGT TATAAGCAGA ACAAGGTAAC ATGACAAGTA GAGTAAGTA GAAGAAGCAA  
GAGGAGTAGC CAGGAAGGAG GGAGGAGAAC GACATAAGAA TCAAGCCTAA AGGGATAAAC AGAAGATTTT  
CACACATGGG CTGGGCCAAT TGGGTGTCGG TTACGCTGT AATCCAGCA CTTTGGGTGG CAGGGGCGA AAGATCGCTT  
GAGCCAGGA GTTCAAGACC AGCCTGGGCA ACATAGTGAG ACTCCCATCT CTACAAAAA TAAATAAATA AATAAACAA  
TCAGCCAGG ATGCTGGCAT GCACCTGTAG TCCTAGCTAC TTGGGAAGCT GACACTGGAG GATTGCTTGA GCCCAGAAGT  
TCAAGACTGC AGTGAGCTTA TCCGTTGACC TGCAGGTGCA C ACAAACCTTT TCGAGGCAAA AGGCAAAAA  
GGCTGCTCTG GGATTCTCTT CAGCCAATCT TCAATGCTCA AGTGTCTGAA GCAGCCATGG CAGAAGTACC TAAGCTCGC  
AGTGAAATGA TGGCTTATTA CAGTGGCAAT GAGGATGACT TGTCTTTGA AGCTGATGGC CCTAAACAGA TGAAGTGCTC  
CTTCCAGGAC CTGGACCTCT GCCCTCTGGA TGGCGGCATC CAGCTACGAA TCTCGACCA CCACTACAGC AAGGGCTTCA  
GGCAGGCCG GTCAGTGTG GTGGCCATGG ACAAGCTGAG GAAGATGCTG GTTCCCTGCC CACAGACCTT CCAGGAGAAT  
GACCTGAGCA CCTTCTTCC CTTCATCTTT GAAGAAGAAC CTATCTTCT CGACACATGG GATAACGAGG CTTATGTGCA  
CGATGCACCT GTACGATCAC TGAAGTGCAC GCTCCGGGAC TCACAGCAAA AAAGCTTGGT GATGTCTGGT CCATATGAAC  
TGAAAGCTCT CCACCTCCAG GGACAGGATA TGGAGCAACA AGTGGCTTTC TCCATGCTCT TGTACAAAGT AGAAGAAAGT  
AATGACAAAA TACCTGTGGC CTTGGGCCTC AAGGAAAAA ATCTGTACCT GTCCTGCTG TTGAAAGATG ATAAGCCAC  
TCTACAGCTG GAGAGTGTAG ATCCCAAAAA TTACCAAAAG AAGAAGATGG AAAAGCGATT TGTCTTCAAC AAGATAGAAA  
TCAATAACAA GCTGGAATTT GAGTCTGCCC AGTTCCCAA CTGGTACATC AGCACCTCTC AAGCAGAAAA CATGCCCGTC  
TTCTGGGAG GGACCAAAAG CGGCCAGGAT ATAAGTACT TCACCATGCA ATTTGTGTCT TCCTAAAGAG AGCTGTACCC  
AGAGAGTCTT GTGCTGAATG TGGACTCAAT CCTAGGGCT GGCAGAAAGG GAACAGAAAG GTTTTTGAGT ACCGCTATAG  
CCTGGACTTT CTGTGTGTCT ACACCAATGC CCAACTGCCT GCCTTAGGGT AGTGCTAAGA GGATCTCTG TCCGACGC  
AGGACAGTCA GCTCTCTCT TTCAGGGCCA ATCCAGCCC TTTTGTGAG CCAGGCCTCT CTCACCTCTC TACTCACTT  
AAAGCCCGCC TGACAGAAAC CAGGCCACAT TTTGGTTCTA AGAAACCTC CTCTGTCAAT CGTCCACA TTCTGATGAG  
CAACCGCTTC CTAATTTATT TATTTATTTG TTTGTTGTT TGTATTCAAT GGTCTAATTT ATTCAAAGGG GGCAAGAAGT  
AGCAGTGTCT GTAAAGAGC CTAGTTTTTA ATAGCTATGG AATCAATTC AATTGGACTG GTGTGCTCTC TTTAAATCAA  
GTCTTTAAT TAAGACTGAA AATATATAAG CTCAGATTAT TTAATGGGA ATATTTATAA ATGAGCAAA ATCATACTGT  
TCAATGGTTC TCAATAAAC TCACT CTGGCAGGAG TAGCAGTGC CCCTTGGGC GACTGTGGA GCCCGAACT  
AGAGAAACAC AGACACGCT CATAGAGCAA CGGCTCTCT CGGAGCTGG AGCCCGCAA GCTCAGCTG AGCTTCTGCT  
TGCCGTCCAC CACTGCCAC ACTGTGTTT GCTGCCATC CAGACCTGCT GCTGACTTCC ATCCCTCTGG ATCCGGCAAG  
GGCCTGCGAT TTGACAATG TCAAGATTA CCGTATATCC CTGTTGTTT GGATACACCA GTGACGTCCA CTTCTAGAAG  
ACAAAGTTAT ATTACTTAAA CAACCAAGA TATGAAACTA TCCATGAAGA ACAATATTAT CAATACACAG CAGTCTTTG  
TAACCATGCC CAATGTGATT GTACCAGATA TTGAAAAGGA AATACGAAGG ATGGAAGATG GAGCATGCAG CTCTTTTCT  
GAGGATGATG ACAGTGCTC TACATCTGAA GAATCAGAGA ATGAAAACCC TCATGCAAGG GGTCTCTTA GTTATAAGT

ACTCAGAAAG GGAGGACCAT CACAGAGGGA GCAGTACCTG CCTGGTGCCA TTGCCATTTT TAATGTGAAC AACAGCGACA  
ATAAGGACCA GGAACCAGAA GAAAAAAGA AAAAGAAAAA AGAAAAAGAG AGCAAGTCAG ATGATAAAAA  
CGAAAATAAA AACGACCCAA AGAAGAAGAT GGAAAAGCGA ATGGCCAAAG TTCCAGACAT GTTTGAAGAC  
CTGAAGAACT GTTACAGTGA AAATGAAGAA GACAGTTCTT CCATTGATCA TCTGTCTCTG AATCAGAAAT CCTTCTATCA  
TGTAAGCTAT GGCCCACTCC ATGAAGGCTG CATGGATCAA TCTGTGTCTC TGAGTATCTC TGAAACCTCT AAAACATCCA  
AGCTTACCTT CAAGGAGAGC ATGGTGGTAG TAGCAACCAA CGGGAAGGTT CTGAAGAAGA GACGGTTGAG TTTAAGCCAA  
TCCATCACTG ATGATGACCT GGAGGCCATC GCCAATGACT CAGAGGAAGA AATCATCAAG CCTAGGTCAG CACCTTTTAG  
CTTCTGAGC AATGTGAAAT ACAACTTTAT GAGGATCATC AAATACGAAT TCATCTGAA TGACGCCCTC AATCAAAGTA  
TAATTCGAGC CAATGATCAG TACCTCACGG CTGCTGCATT ACATAATCTG GATGAAGCAG TGAAATTTGA CATGGGTGCT  
TATAAGTCAT CAAAGGATGA TGCTAAAATT ACCGTGATTG TAAGAATCTC AAAAATCTCA TTGTATGTGA CTGCCAAGA  
TGAAGACCAA CCAGTGCTGC TGAAGGAGAT GCCTGAGATA CCAAAAACCA TCACAGGTAG TGAGACCAAC CTCCTCTTCT  
TCTGGGAAAC TCACGGCACT AAGAACTATT TCACATCAGT TGCCCATCCA AACTTGTTTA TTGCCACAAA GCAAGACTAC  
TGGGTGTGCT TGGCAGGGG GCCACCCTCT ATCATGACT TGCAGTACT GGAAACCAG CGTAGGTCT GGAGTCTCAC  
TTGTCTCACT TGTGCACTGT TGACAGTTCA TATGTACCAT GTACATGAAG AAGCTAAATC CTTTACTGTT AGCTATTGTC  
TGAGCATGTA CTGAGCCTTG TAATTCTAAA TGAATGTTTA CACTCTTTGT AAGAGTGGAA CCAACACTAA CATATAATGT  
TGTTATTTAA AGAACACCTT ATATTTTGCA TAGTACCAAT CATTTTAATT ATTATCTTC ATAACAATTT TAGGAGGACC  
AGAGCTACTG ACTATGGCTA CCAAAAAGAC TCTACCCATA TTACAGATGG GCAAATTAAG GCATAAGAAA ACTAAGAAAT  
ATGCACAATA GCAGTTGAAA CAAGAAGCCA CAGACCTAGG ATTTCTATGAT TTCATTTCAA CTGTTTGCTT TCTGCTTTTA  
AGTTGCTGAT GAACCTTAA TCAAATAGCA TAAGTTTCTG GGACCTCAGT TTTATCATTT TCAAAATGGA GGGAAATAA  
CCTAAGCCTT CCTGCCGCAA CAGTTTTTAT TGCTAATCAG GGAGGTCAAT TTGGTAAAAAT ACTTCTCGAA GCCGAGCCTC  
AAGATGAAGG CAAAGCACGA AATGTTATTT TTTAATTATT ATTTATATAT GTATTTATAA ATATATTTAA GATAATTATA  
ATATACTATA TTTATGGGAA CCCCTTCATC CTCTGAGTGT GACCAGGCAT CCTCCACAAT AGCAGACAGT GTTTTCTGGG  
ATAAGTAAGT TTGATTTCAT TAATACAGGG CATTTTGGTC CAAGTTGTGC TTATCCCATG GCCAGGAAAC TCTGACTTCT  
AGTACTTGGG AGACCTGTAA TCATATAATA AATGTACATT AATTACCTTG AGCCAGTAAT TGGTCCGATC TTTGACTCTT  
TTGCCATTAA ACTTACCTGG GCATTCTTGT TTCATTCAAT TCCCACTGCA ATCAAGTCTT ACAAGCTAAA ATTAGTGAA  
CTCACTTGA ACACCATAG ACCACTGTTA TCAAAACTTT CTTTCTGGA ATGTAATCAA TGTTTCTTCT AGGTCTTAAA  
AATTGTGATC AGACCATAAT GTTACATTAT TATCAACAAT AGTGATTGAT AGAGTGTAT CAGTCATAAC TAAATAAAGC  
TTGCAAGTGA GGGAGTCATT TCATTGGCGT TTGAGTCAGC AAAGAAGTCA AG AGCTGCCAGC CAGAGAGGGA  
GTCATTTTCT TGGCGTTTGA GTCAGCAAAG AAGTCAAGAT GGCCAAAGTT CCAGACATGT TTGAAGACCT GAAGAAGTGT  
TACAGTGAAA ATGAAGAAGA CAGTTCTCTC ATTGATCATC TGCTCTGAA TCAGAAATCC TTCTATCATG TAAGCTATGG  
CCCACTCCAT GAAGGCTGCA TGGATCAATC TGTGTCTCTG AGTATCTCTG AAACCTCTAA AACATCCAAG CTTACCTTCA  
AGGAGAGCAT GGTGGTAGTA GCAACCAACG GGAAGGTTCT GAAGAAGAGA CGGTTGAGTT TAAGCCAATC CATCACTGAT  
GATGACCTGG AGGCCATCGC CAATGACTCA GAGGAAGAAA TCATCAAGCC TAGGTCTATCA CTTTTAGCT TCTGAGCAA  
TGTGAAATAC AACTTTATGA GGATCATCAA ATACGAATTC ATCCTGAATG ACGCCCTCAA TCAAAGTATA ATTCGAGCCA  
ATGATCAGTA CCTCACGGCT GCTGCATTAC ATAATCTGGA TGAAGCAGTG AAATTTGACA TGGGTGCTTA TAAGTCATCA  
AAGGATGATG CTAATAATTAC CGTGATTCTA AGAATCTCAA AAATCAATT GTATGTGACT GCCCAAGATG AAGACCAACC  
AGTGCTGCTG AAGGAGATGC CTGAGATACC CAAAACCATC ACAGGTAGTG AGACCAACCT CCTCTTCTC TGGGAAACTC  
ACGGCACTAA GAACATTTT ACATCAGTTG CCCATCCAAA CTGTGTTTAT GCCACAAAGC AAGACTACTG GGTGTGCTTG  
GCAGGGGGGC CACCCTCTAT CACTGACTTT CAGATCTGG AAACACAGGC GTAGGTCTGG AGTCTCACTT GTCTCACTTG  
TGCAGTGTG ACAGTTCATA TGTACCATGT ACATGAAGAA GCTAAATCCT TTAAGTGTAG TCATTGTGCT AGCATGACT  
GAGCCTGTGA ATTCTAAATG AATGTTTACA CTCTTTGTAA GAGTGAAC AACACTAACA TATAATGTTG TTATTTAAAG  
AACACCTAT ATTTTGCTA GTACCAATCA TTTAATTAT TATTCTTCAT AACAAATTTA GGAGGACCAG AGCTACTGAC  
TATGGCTACC AAAAGACTC TACCATATT ACAGATGGG AAATTAAGGC ATAAGAAAAC TAAGAAATAT GCACAATAGC  
AGTCGAAACA AGAAGCCACA GACCTAGGAT TCTATGATT CATTTCACT GTTGCCTTC TGCTTTTAAG TTGCTGATGA  
ACTCTTAATC AAATAGCATA AGTTTCTGGG ACCTCAGTTT TATCATTTTC AAAATGGAGG GAATAATACC TAAGCCTTCC  
TGCCGCAACA GTTTTTATG CTAATCAGGG AGGTCAATTT GGTAATAATAC TTCTCGAAGC CGAGCCTCAA GATGAAGGCA  
AAGCACGAAA TGTTATTTT TAATTATTAT TTATATATGT ATTTATAAAT ATATTTAAGA TAATTATAAT ATACTATATT  
TATGGGAACC CCTTCATCCT CTGAGTGTGA CCAGGCATCC TCCACAATAG CAGACAGTGT TTTCTGGGAT AAGTAAGTTT  
GATTTTATTA ATACAGGGCA TTTTGGTCCA AGTTGTGCTT ATCCCATAGC CAGGAAACTC TGCATTCTAG TACTTGGGAG  
ACCTGTAATC ATATAATAA TGTACATTAA TTACCTTGAG CCAGTAATTG GTCCGATCTT TGACTCTTT GCCATTAAAC  
TTACCTGGGC ATTTCTGTTT CATTCAATTC CACCTGCAAT CAAGTCTTAC AAGCTAAAT AGCTGAATC CAACCTTGAC  
AACCATGAGA CCACTGTTAT CAAAACCTTT TTTTCTGGAA TGTAATCAAT GTTTCTTCTA GGTCTTAAAA ATTGTGATCA  
GACCATAATG TTACATTATT ATCAACAATA GTGATTGATA GAGTGTATC AGTCATAACT AAATAAAGCT TGCAACAAAA  
TTCTCTG-3' (FRAG. NO: ) (SEQ. ID NO:2517)

5'-AAGCTTCTAC CCTAGTCTGG TGCTACACTT ACATTGCTTA CATCCAAGTG TGGTTATTTT TGTGGCTCCT GTTATACTA  
TTATAGCACC AGGTCTATGA CCAGGAGAAT TAGACTGGCA TAAATCAGA ATAAGAGATT TTGCACTGAC AATAGACCTT  
ATGACACCA ACCAACCCCA TTATTACAA TTAACAGGA ACAGAGGAA TACTTTATCC AACTCACACA AGCTGTTTTT  
CTCCAGATC CATGCTTTTT TGCGTTTATT ATTTTTAGA GATGGGGGCT TCACTATGTT GCCCACTG GACTAAAAT  
CTGGGCCCTCA AGTGATTGTC CTGCTCAGC CTCTGAATA GCTGGGACTA CAGGGGCATG CCATCACACC TAGTTCATT  
CCTCTATTTA AAATATACAT GGCTTAACT CCAACTGGGA ACCCAAAACA TTCATTGCT AAGAGTCTGG TGTTCTACCA  
CCTGAAGTAG GCTGGCCACA GGAATTATAA AAGCTGAGAA ATCTTTTAAAT AATAGTAACC AGGCAACATC ATTGAAGGCT  
CATATGTAAA AATCCATGCC TTCTTTCTC CCAATCTCCA TTCCAAACT TAGCCACTGG TTCTGGCTGA GGCCTTACGC  
ATACCTCCCG GGGCTTGAC ACACCTTCTT ACAGAGAAGA CACACTTTGG GCATATCTTA CAGAAGACCA GGCTCTCTC  
TGGTCTTGG TAGAGGGCTA CTTTACTGTA ACAGGGCCAG GTGGGAGAGT TCTCTCTGA AGCTCCATCC CCTTATAGG  
AAATGTGTTG ACAATATTCA GAAGAGTAAG AGGATCAAGA CTTCTTTGTG CTCAAATACC ACTGTTCTCT TCTTACCCT  
GCCCTAACCA GGAGCTTGTG ACCCCAACT CTGAGGTGAT TTATGCCCTA ATCAAGCAAA CTTCCTCTT CAGAAAAGAT  
GGCTCATTTT CCTCAAAAAG TTGCCAGGAG CTGCCAAGTA TTCTGCCAAT TCACCCTGGA GCACAATCAA CAAATTCAGC  
CAGAACACAA CTACAGCTAC TATTAGAACT ATTATTATTA ATAAATTCCT CTCCAAATCT AGCCCTTGA CTTCGGATTT  
CACGATTTCT CCTTCTCTC TAGAACTTG ATAAGTTTC CGCGTTCC TTTTCTAAG ACTACATGTT TGTCATCTTA

TAAAGCAAAG GGGTGAATAA ATGAACCAAA TCAATAACTT CTGGAATATC TGCAAACAAC AATAATATCA GCTATGCCAT  
CTTTCACAT TTTAGCCAGT ATCGAGTTGA ATGAACATAG AAAAATACAA AACTGAATTC TTCCTGTAA ATTCCCGTT  
TTGACGACGC ACTTGTAGCC ACGTAGCCAC GCCTACTTAA GACAATTACA AAAGGCGAAG AAGACTGACT CAGGCTTAAG  
CTGCCAGCCA GAGAGGGAGT CATTTCATTG GCGTTTGTAGT CAGCAAAGGT ATTGTCTCA CATCTCTGGC TATTAAGTA  
TTTTCTGTTG TTGTTTTTCT CTTTGGCTGT TTTCTCTCAC ATTGCCITCT CTAAAGCTAC AGTCTCTCCT TTCTTTTCTT  
GTCCCTCCCT GGTTTGGTAT GTGACCTAGA ATTACAGTCA GATTTCAGAA AATGATTCTC TCATTTTGCT GATAAGGACT  
GATTCTGTTT ACTGAGGGAC GGCAGAACTA GTTTCCTATG AGGGCATGGG TGAATACAAC TGAGGCTTCT CATGGGAGGG  
AATCTCTACT ATCCAAAATT ATTAGGAGAA AATTGAAAAAT TTCCAACCTCT GTCTCTCTCT TACCTTGTG TAAGGCAAAT  
ACCTTATTCT TGTGGTGTGTT TTGTAACCTC TTCAAACCTT CATTGATTGA ATGCTGTTC TGGCAATACA TTAGGTTGGG  
CACATAAGGA ATACCAACAT AAATAAAACA TTCTAAAAGA AGTTTACGAT CTAATAAAGG AGACAGGTAC ATAGCAAAC  
AATTCAAAAGG AGCTAGAAGA TGGAGAAAAT GCTGAATGTG GACTAAGTCA TTCAACAAAG TTTTCAGGAA GCACAAAGAG  
GAGGGGCTCC CCTCACAGAT ATCTGGATTA GAGGCTGGCT GAGCTGATGG TGGCTGGTGT TCTCTGTTC AGAAGTCAAG  
ATGGCCAAAG TTCCAGACAT GTTTGAAGAC CTGAAGAATCT GTTACAGGTA AGGAATAAGA TTTATCTCTT GTGATTTAAT  
GAGGGTTTCA AGGCTCACCA GAATCCAGCT AGGCATAACA GTGGCCAGCA TGGGGGCGG CCGGCTAGAGG TTGTAGAGAT  
GTGTACTAGT CCTGAAGTCA GAGCAGGTTT AGAGAAGACC CAGAAAAACT AAGCATTGAG CATGTTAAAC TGAGATTACA  
TTGGCAGGGA GACCGCCATT TTAGAAAAAT TATTTTGTAG GTCTGCTGAG CCTACATGA ATATCAGCAT CAACTTAGAC  
ACAGCCTCTG TTGAGATCAC ATGCCCTGAT ATAAGAATGG GTTTTACTGG TCCATTCTCA GGAAAACTTG ATCTCATTCA  
GGAACAGGAA ATGGCTCCAC AGCAAGCTGG GCATGTGAAC TCACATATGC AGGCAAATCT CACTCAGATG TAGAAGAAAG  
GTAAATGAAC ACAAGATAA AATTACGGAA CATATAAAT TAACATGATG TTTCCATTAT CTGTAGTAAA TACTAACACA  
AACTAGGCTG TCAAAATTTT GCCTGGATAT TTTACTAATG ATAAATTATG AAATCTGTTT TAGTGAATAC ATGAAAGTAA  
TGTGTAACAT ATAATCTATT TGGTTAAAT AAAAAGGAAG TGCTTCAAAA CCTTTCTTTT CTCTAAAGGA GCTTAACATT  
CTTCCCTGAA CTTCAATTAA AGCTCTTCAA TTTGTAGCC AAGTCCAATT TTTACAGATA AAGCACAGGT AAAGCTCAAA  
GCCTGTCTTG ATGACTACTA ATTCCAGATT AGTAAGATAT GAATTACTCT ACCTATGTGT ATGTGTAGAA GTCCTTAAAT  
TTCAAAGATG ACAGTAATGG CCATGTGTAT GTGTGTGACC CACAACATC ATGGTCAATTA AAGTACATTG GCCAGAGACC  
ACATGAAATA ACAACAATTA CATCTCATC ATCTTATTTT GACAGTGAAA ATGAAGAAGA CAGTTCCTCC ATTGATCATC  
TGCTCTGAA TCAGGTAAGC AAATGACTGT AATTCTAATG TACTGTGAT TCTTACACAG TGGTTTCTTC ATCCAAAGAG  
AACAGCAATG ACTTGAATCT TAAATACTTT TGTTTTACCC TCAGTAGAGA TCCAGAGACC TGTCTTTGAG TATAAGTAG  
ACCAAGTGGC TCTCTAACT AATAGTTGAT GTGCATTGGC TTCTCCAGA ACAGAGCAGA ACTATCCCAA ATCCCTGAGA  
ACTGGAGTCT CCTGGGGCAG GCTTCATCAG GATGTTAGTT ATGCCATCCT GAGAAAGCCC CGCAGGCCGC TTCACCAGGT  
GTCTGTCTCC TAACGTGATG TGTGTGGTT GTCTTCTG ACACCAGCAT CAGAGGTTAG AGAAAGTCTC CAAACATGAA  
GCTGAGAGAG AGGAAGCAAG CCAGCTGAAA GTGAGAAGTC TACAGCCACT CATCAATCTG TGTATTGTG TTTGGAGACC  
ACAAATAGAC ACTATAAGTA CTGCCTAGTA TGCTTCAGT ATGGCTTTA AAAGCTGTCC CCAAAGGAGT ATTTCTAAAA  
TATTTTGAGC ATTGTTAAGC AGATTTTAA CCTCTGAGA GGGAACTAAT TGGAAAGCTA CCACTACTA CAATCTTGT  
TAACCTATT AGTTACAACA TCTCATTTT GAGCATGCAA ATAAATGAAA AAGTCTTCTT AAAAAATCA TCTTTTATC  
CTGGAAGGAG GAAGGAAGGT GAGACAAAAG GGAGAGAGGG AGGGAAGCCT AATGAAACAC CAGTTACCTA  
AGACCAGAAT GGAGATCCTC CTCCTACCT CTGTGAATA CAGCACTAC TGAAAGAACT TTCATTCCCT GACCATGAAC  
AGCCTCTCAG CTCTGTTT CCTTCTCAC AGAAATCCTT CTATCATGTA AGCTATGGCC CACTCCATGA AGGCTGCATG  
GATCAATCTG TGCTCTGAG TATCTCTGAA ACCTCTAAAA CATCAAGCT TACCTTCAAG GAGAGCATGG TGGTAGTAGC  
AACCAACGGG AAGGTTCTGA AGAAGAGACG GTTGAGTTTA AGCCAATCCA TCACTGATGA TGACCTGGAG GCCATCGCCA  
ATGACTCAGA GGAAGTAAG GGGTCAAGCA CAATAATATC TTTCTTTTAC AGTTTTAAGC AAGTAGGGAC AGTAGAATTT  
AGGGGAAAAT TAAACGTGGA GTCAGAATAA CAAGAAGACA ACCAAGCATT AGTCTGGTAA CTATACAGAG GAAAATTAAT  
TTTTATCCTT CTCCAGGAGG GAGAAATGAG CAGTGGCCTG AATCGAGAAT ACTTGCTCAC AGCCATTATT TCTTAGCCAT  
ATTGTAAAGG TCGTGTGACT TTAGCCCTT CAGGAGAAAG CAGTAATAAG ACCACTTACG AGCTATGTT CTCTCACT  
AACTATGCCT CCTTGGTCAT GTTACATAAT CTTTCTGTA TTAGTTTCC TCTACTGTA AATGGAGATA ATCAGATCC  
CCCACTCATT GGATTGTTG AAAGATTAAG AGTCTCAGGC TTTACAGCT GAGCTAGCTG GGCCCTCTG ATCTTTATAA  
AGATTAAATG AGTCAACATC CCTAATCTC TGGACTAGAA TAATGTCTGG TACAAAGTAA GCACCCAATA AATGTTAGCT  
ATTACTATCA TTATTATTAT TATTTTATTT TTTTTTTT AGATGGAGTC TGGCTCTGTC ACCCAGGCTG GAGTGCAGTG  
GCACAATCTC GGCTCACTGC AAGCTCTGCC TCCTGGGTTT ATGCCATTCT CTGCTCAG CCTCCGAGT AAGCTGGGAA  
TACAGGCACC CGCACTGTT CCCGGCTAAT TTTTGTATT TTAGTAGAG ACGGAGTTTC ACCGTGGTCT CCATCTCCTC  
GTGATCACC CAGCTTGGCC TCCCAAAGTG CCGGATTAC AGGCTGAGC CACCGCGCCC GGCCTATTAT TATTATTATT  
ACTACTACTA CTACCTATAT GAATACTACC AGCAATACTA ATTTATTAAT GACTGGATTA TGTCTAAACC TACAAGAAT  
CCTACCTTCT CATTTTACAT AAAAGGAAAC TAAGCTCATT GAGATAGGTA AACTGCCCAA TGGCATACAT CTGTAAGTGG  
GAGAGCCTCA AATCTAATTC AGTTCTACCT GAGTAAAAA ATCATGGTTT CTCTCCATC CCTTACTGT ACAAGCCTCC  
ACATGAACAA TAAACCCAAT ATCTCTGTT TTAAGATAAT ACCTAAGCAA TAACGCATGT TCACCTAGAA GGTTTTAAAA  
TGTAACAAAA TATAAGAAAA TAAAAATCAC TCATATCGTC AGTGAGAGTT TACTACTGCC AGCACTATGG TATGTTTCTT  
TAAAATCTTT GCTATACACA TACCTACATG TGAACAAATA TGTCTAACAT CAAGACCACA CTATTTACAA CTTTATATCC  
AGCTTTTCTT ACTTAGCAAT GTATTGAGGA CATTTTAGAG TGCCCGTTTT TCAACATTAT AAGCAATGCA ACAATGAACA  
TCTGTATAAA TAAATATTCA TTTCTCTCAC CCTTATTTT CTTAGAATAT ATCTAGAA GTAGAATTTT CCAGAGCCAT  
GAGGATTGT GACGCTATTG ATATGTGCCA CTTTGCATC TCTGTGACAT ATATAATTAT TTTAATGCA TTCATTTTTT  
TCTCAGAGTG CATTCGTTT AAAACATAGA CGGGAATAC TGGTAGTCTT CTTGTGAGT TAGAAACACC CAAACAATGA  
AAAATGAAAA AGTTGCACAA ATAGTCTCTA AAAACAATGA AACTATTGCC TGAGGAATTG AAGTTTAAAA AGAAGCATAT  
AAGCAACAA AAGGATAATC CTAGAAAACC AGTTCGTCTG ACTGGGTGAT TCACTTCTC TTGCTTCTT CATCTGGATT  
GGAATATTCC TAATACCCCC TCCAGAACTA TTTTCCCTGT TTGTACTAGA CTGTGTATAT GACTGTGTT TGTACATAGA  
CATTAACTG CACTTGTGAT CATGGTTTTA GAAATCATCA AGCCTAGGTC ATCACCCTTT ACCTTCTGTA GCAATGTGAA  
ATACAACCTT ATGAGGATCA TCAAATACGA ATTCATCTG AATGACGCCC TCAATCAAAG TATAATTGCA GCCAATGATC  
AGTACCTCAC GGCTGCTGCA TTACATAATC TGGATGAAGC AGGTACATTA AAATGGCACC AGACATTTCT GTCATCTCC  
CCTCCTTTCA TTTACTTATT TATTTATTTT AATCTTTCTG CTTGCAAAAA ACATACCTCT TCAGAGTTCT GGGTGTGACA  
ATCTTCCAG AATAGCTTGA AGCACAGCAC CCCATAAAA ATCCCAAGCC AGGGCAGAAG GTTCAACTAA ATCTGGAAGT  
TCCACAAGAG AGAAGTTTCC TATCTTTGAG AGTAAAGGGT TGTGCACAAA GCTAGCTGAT GACTACCTC TTTGGTTCTT

TCAGACATTC TTACCCTCAA TTTTAAAACT GAGGAACTG TCAGACATAT TAAATGATTT ACTCAGATTT ACCCAGAAGC  
CAATGAAGAA CAATCACTCT CTTTTAAAAA GTCTGTGAT CAAACTCACA AGTAACACCA AACCAGGAAG ATCTTTATTA  
TCTCTGATAA CATATTTGTG AGGCAAAACC TCCAATAAGC TACAAATATG GCTTAAAGGA TGAAGTTTAG TGTCCAAAAA  
CTTTATCAC ACACATCCAA TTTTCATGGC GGACATGTTT TAGTTTCAAC AGTATACATA TTTTCAAAGG TCCAGAGAGG  
CAATTTTGCA ATAAACAAGC AAGACTTTTT CTGATTGGAT GCACCTCAGC TAACATGCTT TCAACTCTAC ATTTACAAAT  
TATTTTGTGT TCTATTTTTC TACTTAATAT TATTTCTGCA ATTTTCCCAA TATTGACATC GTGTATGTAT TTGCCATTTT  
TAATATCACT AGACAATTCA ATCAGGTTGC TACGTTGGTC CCTTGGGTTT ACTCTAAATA GCTTGATTGC AAATATCTTT  
GTATATATTA TTGTTTTTTC TCCTATCTTG TAATTTCTTT GAGCACATCC CAAAGAGGAA TGCCTAGATC AACTGGGCACA  
AATAATTTGA CAGCTCTTAT TAAACATTAT TCTGTAAGTA AAAACTGAAC TACTTTTCAG TATCACTAGC AACATATGAG  
TGTATCAGCT TCCTAAACCC CTCCATGTTA GGTCAATTATG AACTTATGAT CTAACAAATT ACAGGGTCTT ATCCCACTAA  
TGAAATTATA AGAGATTCAA CACTTATTCA GCCCCGAAGG ATTCATTCAA CGTAGAAAAT TCTAAGAACA TTAACCAAGT  
ATTACCTGC CTAGTGAGTG TGGAAGACAT TGTGAAGGAC ACAAAGATGT ATAGAATTCC ATTCCTGACT TCCAGGTATT  
TACACCATAG GTGGGGACCT AACTACACAC ACACACACAC ACACACACAC ACATGACACA CACAATCTAC  
ATCAACACTT GATTTTATAC AAATACAATG AATTACTTTT CTTTTGGTTT CTCTCTTCA CCAGTGAATG TTGACATGGG  
TGCTTATAAG TCATCAAAGG ATGATGCTAA AATTACCGTG ATTCTAAGAA TCTCAAAAAC TCAATTGTAT GTGACTGCCC  
AAGATGAAGA CCAACCAGTG CTGCTGAAGG TCAGTTGTCC TTTGTCTCCA ACTTACCTTC ATTTACATCT CATATGTTTG  
TAAATAAGCC CAATAGGCAG ACACCTCTAA CAAGGTGACA CTGCTCTCTT TCCTCTCTAC CACAGCCCCC ACCTACCCAC  
CCCCTCCCA TTGATTCCAG AGGCGTGCCT AGGCAGGATC TATGAGAAAA TATAACAGAG AGTAAGAGGA AAATTACCTT  
CTTTCTTTT CTTTCCCTG CCTGACCTTA TACCTCTCC ATCCAGAGC ATCCATTTAT TCCATTGATC TTTACTGACA  
TCTATTATCT GACCTACACA ATACTAGACA TTAGGACAAAT GTGGCCTGCC TCCAAGAAAC TCAATAAAGC CAAGTGAGAT  
CAGAGAGGAT TAATCACCTG CCAATGGGCA CAAAGCAACA AGCTGGGAGC CAAGTCCCAA AATGGGGCCT GCTGCTTCCA  
GTTCCCTCT CTCTGCATTG ATGTCAGCAT TATCTTCGT CCCAGTCTG TCTCCACTAC CACTTTCCCC CTCAAACACA  
CACACACACA ACAGCCTTAG ATGTTTTCTC CACTGATAAG TAGGTGACTC AATTTGTAAG TATATAATCC AAGACCTTCT  
ATTCCCAAGT AGAATTTATG TGCCTGCCTG TGCTTTTCTA CCTGGATCAA GTGATGTCTA CAGAGTAGGG CAGTAGCTTC  
ATTCATGAAC TCATTCAACA AGCATTATTC ACTGAGAGCC TTGTATTTT CAGGCATAGT GCCAACAGCA GTGTGGACAG  
TGTGTCATCA AAGCCTCTAG TCTCATAGAA CTAGTCTT TGGAGGATAT GGAAGAACAGA CAACCCAAAC AACCAACAAA  
AGAGCAAGAT GCTGCAAAAA AAAAAAAAT GAATAGGGTG CTAAGATAGA GAAAAGTGGG AGAGTGCTAT  
TTAGACAAAG TGGTAAAAAC AAAGCCCCTT GTGAGATGAG AGCTGCCGAC AGAGGGGGCG GGTGATGGTT GTGGGTTTTT  
GGGTAGGACA TTCAGAGGAG GGGGGGGGTC GTGTTGTGG GTTTTGGGT AGGACATTCA GAGGAGGGGG CGGGTCTGG  
TTGTGGGTTT TTGGGTAGGA CATTGAGAGG AGGGGGCGGG TCGTGGTTGT GGGTTTTTGG GTAGGACATT CAGAGGAGGG  
GGCGGGTCTG GGTGTGGGT TTTTGGGACA TTCAGAGGAG TCTGAATGCA CCCAGGCCTA CAACTTCAAG ATGGTAAGG  
ACAGCTCAA GGATCAGAAG AAGCATTCTT GGAATGGGG CATTTTGAGA AGGAGGAAAA ATATGCAGAG ACTAGTCTCT  
GCAGCTTGG CATTGTGATT TCAATTTGAGG TACAATGAAA ACCCATTAAT GGGTTTCA CAAGTGAATG GCCTGACCTC  
ACTTATATTT CCTAAAATAG AAAACAGATC AGAAGGAAGG CAATAGAGAA GCAGAAAGTC CAATGAGGAG GTTTCACAGC  
AGTCATGGGG GTGGGGTAAG GAAAAGAAAGT GGAAGAAAC AGACAGAATT GGGTTATATT TTGGAGATAG AACCAACAGA  
AGGAAGAGGA GAAACAACAT TTAGTGAGAA GGGAAAAAGT AGGAGAGGAA TAGGTTTGGG AAATAAATCC TGCTGACATT  
GGAACCCCA AGGAAGCCTC AAAAGTATAT TACTTGCTT TAGATTAAAA AGAATAGGAA AGAAGCATCT CAACTTGGAA  
TTTGAAATCT ATTTTCCAT AAAAGTATTG TTAATTTCTA CTCATTTAGA AGGAGGAAAA ATATGCAGAG ACTAGTCTCT  
AAAGAGTTTA CTGATATACT TAGGAATTTT GTGTGTATGT GTGTGTGTGT ATGTGTGTGT GTGTGTGTAA CCTTCAATTG  
TTGACTTAAA TACTGAGATA AATGTCATCT AAATGCTAAA TTGATTTCCC AAAGGTATGA TTTGTTCACT TGGAGATCAA  
AATGTTTAGG GGGCTTAGAA TCACTGTAGT GCTCAGATT GATGCAAAAT GTCTTAGGCC TATGTTGAAG GCAGGACAGA  
AACATGTTT CCTCCTACC TGCTGGATA CAGTAAGATA CTAGTGTCAC TGACAATCTT CATAACTAAT TTAGATCTCT  
CTCCAATCAA CTAAGGAAAT CAACTCTTAT TAATAGACTG GGCCACACAT CTAAGGGA TGTAATAAAT GCTTGCTGAA  
TGAACAAATG AATGAAGAGC CTATAGCATC ATGTTACAGC CATAGTCTTA AAGTGGTGT TCTCATGAAG GCCAAATGCT  
AAGGGATTGA GCTTCAGTCC TTTTCTAAC ATCTGTCTT CTAACAGAAAT TCTCTCTT TCTTCATAGG AGATGCCTGA  
GATACCCAAA ACCATCACAG GTAGTGAGAC CAACCTCTC TTCTTCTGGG AAACCTCACG CACTAAGAAC TATTTACAT  
CAGTTGCCA TCCAACTTG TTTATTGCCA CAAAGCAAGA CTACTGGGTG TGCTTGGCAG GGGGGCCACC CTCTATCACT  
GACTTTCAGA TACTGGAAAA CCAGGCGTAG GTCTGGAGTC TCACTGTCT CACTTGTGCA GTGTTGACAG TTCATATGTA  
CCATGTACAT GAAGAAGCTA AATCCTTTAC TGTTAGTCAT TTGCTGAGCA TGTACTGAGC CTGTGAATTC TAAATGAATG  
TTTACACTCT TTGTAAGAGT GGAACCAACA CTAACATATA ATGTTGTTAT TTAAGAACA CCTATATT TGCTAGTAC  
CAAGACTTTT AATTATTATT CTTTATAACA ATTTAGGAG GACCAGACT ACTGACTATG GCTACCAAAA AGACTCTACC  
CATATTACAG ATGGGCAAT TAAGGCATAA GAAAATAAG AAATATGCAC AATAGCAGTT GAAACAAGAA GCCACAGACC  
TAGGATTICA TGATTTTCACT TCAACTGTTT GCCTTCTGCT TTAAGTTGC TGATGAACTC TTAATCAAAT AGCATAAGTT  
TCTGGGACCT CAGTTTATC ATTTTCAAAA TGGAGGGAAT AATACCTAAG CCTTCTGCC GCAACAGTTT TTTATGCTAA  
TCAGGGAGGT CATTITGGTA AAATACTTCT CGAAGCCGAG CCTCAAGATG AAGGCAAGC ACGAAATGTT ATTTTAAAT  
TATTATTAT ATATGTATT ATAAATATAT TTAAGATAAT TATAATATAC TATATTATG GGAACCCCTT CATCCTCTGA  
GTGTGACCAG GCATCCTCCA CAATAGCAGA CAGTGTCTT TGGGATAAGT AAGTTTGATT TCATTAATAC AGGGCATTTT  
GGTCCAAGTT GTGCTTATCC CATAGCCAGG AAACCTCTGCA TTCTAGTACT TGGGAGACCT GTAATCATAT AATAAATGTA  
CATTAATTAC CTGAGCCAG TAATTGGTCC GATCTTTGAC TCTTTGCCA TTAACCTTAC CTGGGCATTG TTGTTTCATT  
CAATTCCACC TGCAATCAAG TCCTACAAGC TAAATTTAGA TGAACCTAAC TTTGACAACC ATGAGACCAC TGTTATCAAA  
ACTTCTTTT CTGGAATGTA ATCAATGTTT CTCTAGGTT CTAATAATTTG TGATCAGACC ATAATGTTAC ATTATTATCA  
ACAATAGTGA TTGATAGAGT GTTATCAGTC ATAACATAA AAAGCTTGCA ACAAATTTCT CTGACACATA GTTATTCATT  
GCCTTAATCA TTATTTTACT GCATGGTAAT TAGGCAAAA TGGTAAATGT TTACATAAAT AATTGTATT AGGTGTTACT  
TATAAAATCA AACCAAGATT TTATATTTT TTCTCTCTT TGTAGCTGC CAGTATGCAT AAATGGCAT AGGAATGATA  
ATATTTCCGG GTTCACTTAA AGCTCATATT ACACATACAC AAAACATGTG TTCCCATCTT TATACAACT CACACATACA  
GAGCTACATT AAAACAACCT AATAGGCCAG GCACGGTGGC TCAGACCTGT AATCCAGCA CTTTGGGAGG-3' (FRAG.  
NO: ) (SEQ. ID NO:2510)

5'-ACCAACCTCT TCGAGGCACA AGGCACAACA GGCTGCTCTG GGATTCTCTT CAGCCAATCT TCATTGCTCA AGTGTCTGAA  
GCAGCCATGG CAGAAGTACC TGAGCTCGCC AGTGAAATGA TGGCTTATTA CAGTGGCAAT GAGGATGACT TGTTCTTTGA



AGCTGATGGC CCTAAACAGA TGAAGTGCTC CTTCAGGAC CTGGACCTCT GCCCTCTGGA TGGCGGCATC CAGCTACGAA  
TCTCCGACCA CCACTACAGC AAGGGCTTCA GGCAGGCCGC GTCAGTTGTT GTGGCCATGG ACAAGCTGAG GAAGATGCTG  
GTTCCCTGCC CACAGACCTT CCAGGAGAAT GACCTGAGCA CTTCTTTCC CTTCATCTTT GAAGAAGAAC CTATCTTCTT  
CGACACATGG GATAACGAGG CTTATGTGCA CGATGCACCT GTACGATCAC TGAAGTGCAC GCTCCGGGAC TCACAGCAAA  
AAAGCTTGGT GATGTCTGGT CCATATGAAC TGAAAGCTCT CCACCTCCAG GGACAGGATA TGGAGCAACA AGTGGTGTTC  
TCCATGTCTT TTGTACAAGG AGAAGAAAGT AATGACAAAA TACCTGTGGC CTGGGCCCTC AAGGAAAAA ATCTGTACCT  
GTCTGGCGT TTGAAAGATG ATAAGCCAC TCTACAGCTG GAGAGTGTAG ATCCCAAAAA TTACCCAAAG AAGAAGATGG  
AAAAGCGATT TGCTTCAAC AAGATAGAAA TCAATAACAA GCTGGAATTT GAGTCTGCC AGTCCCAAA CTGGTACATC  
AGCACCTCTC AAGCAGAAAA CATGCCCGTC TTCTGGGAG GGACCAAAAG CGGCCAGGAT ATAAGTACT TCACCATGCA  
ATTTGTGTCT TCCTAAAGAG AGCTGTACCC AGAGAGTCTT GTGTGAATG TGGACTCAAT CCCTAGGGCT GGCAGAAAGG  
GAACAGAAAG GTTTTGTAGT ACGGCTATAG CCTGGACTTT CTGTGTCTT ACACCAATGC CCAACTGCCT GCCTTAGGGT  
AGTGCTAAGA GGATCTCTCTG TCCATCAGCC AGGACAGTCA GCTCTCTCT TFCAGGGCCA ATCCCAAGCC CTTTTGTGTA  
GCCAGGCTCT TCTACCTCT CCTACTCCT TAAAGCCCGC CTGACAGAAA CCACGGGCCA ATTTGGTTCT AAGAAACCTT  
CTGTCTTCTG CTCCACATT CTGATGAGCA ACCGCTTCCC TATTATTAT TTTATTGTT TGTGTTGTT ATTCTTGGT  
CTAATTTATT CAAAGGGGGC AAGAAGTAGC AGTGTCTGTA AAAGAGCCTA GTTTTAATA GCTATGGAAT CAATTCATTT  
TGGACTGTGT TGCTCTCTT AAATCAAGTC CTTTAATTA GACTGAAAAT ATATAAGCTC AGATTATTTA AATGGGAATA  
TTTATAAATG AGCAATATC ATACTGTTC ATGGTTCTGA AATAAACTTC TCTGAAG-3' (FRAG. NO: XSEQ. ID NO:2511)  
5'-AGAAAGAAAG AGAGAGAGAA AGAAAGAAA GAGGAAGGAA GGAAGGAAGG AAGAAAGACA GGCTCTGAGG  
AAGTGGCAG TTCTACAAC GGGAGAACCA GTGGTTAAT TGCAAGTGG ATCCTGTGGA GGCANNCA GAAGTCCCTT  
AGGCCACCA GACAGGGCTT TTAGCTATCT GCAGGCCAGA CACCAAAATTT CAGGAGGGCT CAGTTTAGG AATGGATTAT  
GGCTTATCAA ATTCACAGGA AACTAACATG TTGAACAGCT TTTAGATTTC CTGTGAAAA TATAACTTAC TAAAGATTGA  
GTTCTGTGA CTGACTCTG ATATCAAGAT ACTGGGAGCC AAATTAATA TCAGAAGGCT GCTTGGAGAG CAAGTCCATG  
AAATGCTCT TTTCCACAG TAGAAGCTAT TTCCCTCTG TCTCAAATAC TTGCACAGAG GCTCACTCCC TTGGATAATG  
CAGAGCGAGC ACGATACCTG GCACATACTA ATTTGAATAA AATGCTGTCA AATTCCTTAT CACCCATTCA AGCAGCAAA  
TCTATCTCAC TGAATGTAC ATGCCAGGCA CTGTGCTAGA CTGGCTCAA AAAGATTTC GTTCTCTGGA GGAACCAAGG  
GGGCAAGGTT TCAACTCAGT GCTATAAGAA GTGTTACAGG CTGGACACGG TGGCTCACGC GTTAATCCC AACATTGGG  
AGGCCGAGG GGGCAGATCA CAAGGTCAGG AGATCGAGAC CATCTGGCT AACATGGTGA AACCTGTCT CTTAAATAA  
TACAAAAAT TAGCCGGGCG TTGGCGGCG GTGCTGTAG TCCAGCTGC TGGGGAGGCT GAGGCAGGAG AATGGTGTGA  
ACCCGGGAGG CGAACTTGC AGGGGGCGGA GATCGTGCCA CTGACTCCA GCCTGGGCGA CAGAGTGAGA CTCTGTCTCA  
AAAAAATAA AAAAGTGTTA TGATGCAGC CTGTCAAAGA GGCAAAGGAG GGTGTTCTA CACTCCAGGC ACTGTTCTA  
ACCTGGACTC TCATTCTTC TACAAATGA GGGCTCCCCT GGGCAGTACC CTGGAGCAGG CACTTGTCTG GTGTCTCGGT  
TAAAGAGAAA CTGATACTC TTGGTATTAC CAAGAGATAG AGTCTAGAT GGATATTCT ACAGAAACAA TATTCCTACT  
TTTCAGAGTT CACCAAAAA TCATTTTAGG CAGAGCTCAT CTGGCATTGA TCTGGTTTCT CCATGAGATT GGTAAGGTA  
ACAGCACCTG GTCTGCGAG GTTGTGTGAG CTTATCTCCA GGGTTGCCCT AACTCCGTCA GGAGCCTGAA CCCTGCATAC  
CGTATGTTCT CTGCCCCAGC CAAGAAAGGT CAATTTCTC CTCAGAGGCT CTTGCAATTG ACAGAGAGCT CCCGAGGCAG  
AGAACAGCAC CCAAGGTAGA GACCCACACC CTCAATACAG ACAGGGAGGG CTATTGGCCC TTCATTGTAC CCATTTATCC  
ATCTGTAAGT GGAAGATTTC TAAACTTAA GTACAAAGAA GTGAATGAAG AAAAGTATGT GCATGTATAA ATCTGTGTGT  
CTTCCACTTT GTCCACATA TACTAAATTT AAACATCTTT CTACGTTGGG AAAATCCAGT ATTTAATGT GGACATCAAC  
TGCACAACGA TTGTCAGGAA AACAATGCAT ATTTGCATGG TGATACATTT GCAAAATGTG TCATAGTTTG CTACTCTTGT  
CCCTTCCATG AACCAGAGAA TTATCTCAGT TTATTAGTCC CTTCCCTTAA GAAGCTTCCA CCAATACTCT TTTCCCTTT  
CTTTAACTT GATTGTGAAA TCAGGTATTC AACAGAGAAA TTTCTCAGCC TCCTACTTCT GCTTTTGAAG GCTATAAAAA  
CAGCGAGGGA GAAACTGGCA GATACCAAACT CTCTCGAGG CACAAGGCAC AACAGGCTGC TCTGGGATTCT TCTTCAGCCA  
ATCTTCATTG CTCAAGTATG ACTTTAATCT TCCTTACAAC TAGGTGCTAA GGGAGTCTCT CTGTCTCTCT GCCTCTTGT  
GTGTATGCAT ATCTCTCTC TCTCTCTCT TCTTCTCTG TCTCTCTCT CTTCTCTCT CTCTCTCTCT CTGAGCTTTT  
TGCAAAATG CCAGGTGTAA TATAATGCTT ATGACTCGGG AAATATTCTG GGAATGGATA CTGCTTATCT AACAGCTGAC  
ACCCTAAAGG TTAGTGTCAG AGCCTCTGCT CCAGCTCTCC TAGCCAATAC ATTGCTAGTT GGGGTTTGGT TTAGCAAAATG  
CTTTCTCTA GACCCAAAGG ACTTCTCTT CACACATTCA TTCATTTACT CAGAGATCAT TTCTTGTGAT GACTGCCATG  
CACTGGATGC TGAGAGAAAT CACACATGAA CGTAGCCGTC ATGGGGAGT CACTCATTTT CTCCTTTTCA CACAGGTGTC  
TGAAGCAGCC ATGGCAGAAG TACCTGAGCT CGCCAGTGAA ATGATGGCTT ATTACAGGTC AGTGGAGACG CTGAGACCAG  
TAACATGAGC AGGTCTCTC TTTCAAGAGT AGAGTGTAT CTGTCTTGG AGACCAGATT TTTCCCTTAA ATTGCCTCTT  
TCAGTGGCAA ACAGGGTGCC AAGTAAATCT GATTTAAAGA CTACTTTCCC ATTACAAAGT CCTCCAGCTT TGGGACCTGG  
AGGCTATCCA GATGTGTTGT TGCAAGGGCT TCCTGCAGAG GCAATGGGG AGAAAAAGATT CCAAGCCAC AATACAAGGA  
ATCCCTTTCG AAAGTGTGGC TTGGAGGGAG AGGGAGAGCT CAGATTTTAG CTGACTCTGC TGGGCTAGAG GTTAGGCCCTC  
AAGATCCAAC AGGGAGCACC AGGGTGCCCA CTGCCAGGC CTAGAATCTG CTTCTGGAC TGTCTGCGC ATATCACTGT  
GAAACTTGCC AGGTGTTTCA GGCAGCTTTC AGAGGCAGGC TGTTGTCAGT TTCTTATGAA CAGTCAAGTC TTGTACACAG  
GGAAGGAAAA ATAAACCTGT TTAGAAGACA TAATGTAGAC ATGTCCCTGT TTTTATTACA GTGGCAATGA GGATGACTTG  
TTCTTTGAAG CTGATGGCCC TAAACAGATG AAGGTAAGAC TATGGGTTTA ACTCCCAACC CAAGGAAGGG CTCTAACACA  
GGGAAAGCTC AAAGAAGGGA GTTCTGGGCC ACTTTGATGC CATGGTATTT TGTTTTAGAA AGACTTTAAC CTCTCCAGT  
GAGACACAGG CTGCACCACT TGCTGACCTG GCCACTTGGT CATCATATCA CCACAGTCAC TCACTAACGT TGGTGGTGGT  
GGCCACACTT GGTGGTGACA GGGGAGGAGT AGTGATAATG TTCCCATTTT ATAGTAGGAA GACAACCAAG TCTTCAACAT  
AAATTTGATT ATCTTTTAA GAGATGGATT CAGCCTATGC CAATCACTTG AGTTAAATC TGAAACCAAG AGATGATCTT  
GAGAACTAAC ATATGTCTAC CCCTTTTGG TAGAATAGTT TTTTGTCTAC TGGGGTGAAG CTTATAACAA CAAGCATATG  
ATGATATAAA CAAAAAGATG AATTGAGACT TGAAAGAAAA CCATTCACCT GCTGTTTGG TGTGACAGT CATTTTACCC  
GCTTTGGACC TCATCTGAAA AATAAAGGGC TGAGCTGGAT GATCTCTGAG ATTCCAGCAT CCGTCAACCT CCAGTTCTGA  
AATATTTTCA GTTGTAGCTA AGGGCATTTC GGCAGCAAAAT GGTCAATTTT CAGACTCATC CTTACAAAGA GCCATGTTAT  
ATTCTGTCTG TCCCTTCTGT TTTATATGAT GCTCAGTAGC CTTCTAGGT GCCAGCCAT CAGCCTAGCT AGGTCAGTTG  
TGCAGGTTGG AGGCAGCCAC TTTTCTCTGG CTTTATTTTA TTCCAGTTT TGATAGCCTC CCCTAGCCTC ATAAATCCAGT  
CCTCAATCTT GTTAAAAACA TATTTCTTAA GAAGTTTAA GACTGGCATA ACTTCTTGGC TGCAGCTGTG GGAGGAGCCC  
ATTGGCTGT CTGCCTGGCC TTTGCCCCCC ATTGCCTCTT CCAGCAGCTT GGCTCTGCTC CAGGCAGGAA ATCTCTCTCT

GCTCAACTTT CTTTGTGCA CTTACAGGTC TCTTTAACTG TCTTCAAGC CTTTGAACCA TTATCAGCCT TAAGGCAACC  
TCAGTGAAGC CTTAATACGG AGCTTCTCTG AATAAGAGGA AAGTGGTAAC ATTTACAAA AAGTACTCTC ACAGGATTG  
CAGAATGCCT ATGAGACAGT GTTATGAAAA AGGAAAAAAA AGAACAGTGT AGAAAAATTG AATACTTGCT GAGTGAGCAT  
AGGTGAATGG AAAATGTTAT GGTCTCTGCG ATGAAAAAGC AAATCATAGT GTGACAGCAT TAGGGATACA AAAAGATATA  
GAGAAGGTAT ACATGTATGG TGTAGGTGGG GCATGTACAA AAAGATGACA AGTAGAATCG GGATTATTTC TAAAGAATAG  
CCTGTAAGGT GTCCAGAAGC CACATTCTAG TCTTGAGTCT GCCTCTACCT GCTGTGTGCC CTTGAGTACA CCCTAACCT  
CCTTGAGCTT CAGAGAGGGA TAATCTTTT ATTTTATTTT ATTTTATTTT GTTTTGTTTT GTTTTGTTTT GTTTTATGAG  
ACAGAGTCTC ACTCTGTTGC CCAGGCTGGA GTGCAGTGGT ACAATCTTGG CTTACTGCAT CCTCCACCTC CTGAGTTCAA  
GCGATTCTCC TTCCTCAGTC TCCTGAATAG CTAGGATTAC AGGTGCACCC CACCACACCC AGCTAATTTT TGTATTTTA  
GTAGAGAAGG GGTTCGCCA TGTGGCCAG GCTGGTTTG AAGTCTGAC CTAAATGATT CATCCACCTC GGCTTCCCAA  
AGTGCTGGGA TTACAGGCAT GAGCCACCAC GCCTGGCCCA GAGAGGGATG ATCTTTAGAA GCTCGGGATT CTTTCAAGCC  
CTTCTCTCT CTCTGAGCTT TCTACTCTCT GATGTCAAAG CATGGTTCTT GGCAGGACCA CCTCACCAGG CTCCCTCCCT  
CGCTCTCTCC GCAGTGTCTC TTCAGGACC TGGACCTCTG CCCTCTGGAT GCGGCATCC AGCTACGAAT CTCCGACCAC  
CACTACAAGA AGGCTTTCAG GCAGGCCCGG TCACTGTTG TGGCCATGGA CAAGCTGAGG AAGATGTCTG TTCCCTGCC  
ACAGACCTTC CAGGAGAATG ACCTGAGCAC CTCTTTCCC TTCATCTTG AAGAAGGTAG TTAGCCAAGA GCAGGCAGTA  
GATCTCCACT TGTGTCTCT TGGAAATCAT CAAGCCCCAG CCAACTCAAT TCCCCAGAG CCAAAGCCCT TTAAGGTAG  
AAGGCCACG GGGGAGACAA ACAAAGAAG GCTGGAAACC AAAGCAATCA TCTCTTAGT GAAACTATT CTTAAAGAAG  
ATCTTGATGG CTAATGACAT TTGCAACTCC CTCACTCTT CTCAGGGGCC TTCACTTAC ATTGTACCA GAGGTTCGTA  
ACCTCCCTGT GGGCTAGTGT TATGACCATC ACCATTTTAC CTAAGTAGCT CTGTGCTCG GCCACAGTGA GCAGTAATAG  
ACCTGAAGCT GGAACCCATG TCTAATAGT TCAAGTCTAG TGTCTTAGC CACCCACTC CCAGTCTCAT CCCTACTGTT  
GTTGTCATCA GACTTTGACC GTATATGCTC AGGTGCTCT CAAGAATCA AATTTTGCCA CTCGCTCA CGAGGCTCG  
CCTTCTGATT TTATACCTAA ACAACATGTG CTCCACATTT CAGAACCTAT CTCTCTGAC ACATGGGATA ACGAGGCTTA  
TGTGCACGAT GCACCTGTAC GATCACTGAA CTGCACGCTC CGGACTCAC AGCAAAAAAG CTTGGTGATG TCTGGTCCAT  
ATGAACTGAA AGCTCTCCAC CTCAGGGGAC AGGATATGGA GCAACAAGGT AAATGGAAC ATCTCGGTT CCCTGCCTGG  
CCTCCTGGCA GCTTGCTAAT TCTCCATGTT TAAACAAG TAGAAAGTTA ATTTAAGGCA AATGATCAAC ACAAGTGAAG  
AAAAATATTA AAAAGGAATA TACAACTTT GGTCTAGAA ATGGACATTT TGATTGCACT GGCCAGTGCA TTTGTAAACA  
GGAGTGTGAC CTAAGAAAT TAGACGGCTC AAGCACTCCC AGGACATGT CCACCCAAGT CTCTGGGCA CTGAGTCAAGT  
TCAATTTCTT CACAATATGG GGTCAATTGA TGGACATGGC CTAAGTCTC GTGGGTTCTC TCTCTCTGTT GTTGAGGCTG  
AAACAAGAGT GCTGGAGCGA TAATGTGCTC ATCCCTCTC CCAGTCTCTC CCCCTTGCC CAACATCCGT CCCACCAAT  
GCCAGTGGT TCCTGTAGG GAAATTTTAC CGCCAGCAG GAACTTATAT CTCTCCGCTG TAACGGGCAA AAGTTTCAAG  
TGCGGTGAAC CCATCATTAG CTGTGGTGT CTGCTGGCA TCGTGCCACA GTAGCCAAAG CCTCTGCACA GGAGTGTGGG  
CAACTAAGG TGCTGACTTT GAAGGACAGC CTCACCTAGG GGAAGCTAT TTGCTCTCAG CCAGGCCAAG AAAATCCTGT  
TTCTTTGGA TCGGGTAGTA AGAGTGATCC CAGGGCTCTC AATTGACACT GCTGTGACT GGAAGATCA AAATGAGTGT  
CTCTCTTGG AGCCACTTTC CCAGCTCAGC CTCTCTCTC CCAGTTCTT CCCATGGGCT ACTCTCTGTT CCTGAAACAG  
TTCTGGTGCC TGATTTCTGG CAGAAGTACA GCTTCACCTC TTCTCTTCC TTCCACATTG ATCAAGTTGT TCCGCTCTG  
TGGATGGGCA CATTGCCAGC CAGTGACACA ATGCTTCTC TCCTCTCTC CTTCAGCATT TAAATGTAG ACCCTCTTTC  
ATTCTCCGTT CTAATGCTA TGAGGCTCTG AGAAACCTC AGGCTTTGA GGGGAAACCC TAAATCAACA AAATGACCCT  
GCTATTGCT GTGAAGAGT AAGTTATCTT GTGTCTTAG CCAAGGAACC TCACTGTGGG TTCCACAGA GGCTACCAAT  
TACATGATC CTACTCTCG GGCTAGGGGT TGGGTGACC CTGATGCTG TGTCCCTAAC CACAAGACCC CCTCTTTCT  
TCAGTGGTGT TCTCCATGTC CTTGTACAA GGAGAAGAAA GTAATGACAA AATACCTGTG GCCTTGGGCC TCAAGGAAAA  
GAATCTGTAC CTGCTCTGCG TGTGAAAGA TGATAAGCCC ACTCTACAGC TGGAGGTAAG TGAATGCTAT GGAATGAAGC  
CCTTCTCAGC CTCCTGTAC CACTTATTC CAGACAATTC ACCTTCTCCC CGCCCCATC CTAAGGAAAA GCTGGGAACA  
GGTCTATTG ACAAGTTTGT CATTAATGTA AATAAATTTA ACATAATTTT TAAGTGGCTG CAACCTTCAA TCCTGTGCA  
GAAATTAATA TCATTTTGGC GATGTTATTA TGTCTACCA TAGTTACAA CCAACAGAT TATATATTGT TAGGGCTGCT  
CTCATTTGAT AGACACCTTG GGAATAGAT GACTTAAAGG GTCCCATAT CACGTCCACT CCACTCCCAA AATCACCACC  
ACTATCACCT CCAGCTTCT CAGCAAAAGC TTCATTTCCA AGTTGATGTC ATTCTAGGAC CATAAGGAAA AATACAATAA  
AAAGCCCTG GAACTAGGT ACTTCAAGAA GCTCTAGCTT AATTTTACC CCCCCAAAA AAAAAATTC TCACCTACAT  
TATGCTCTC AGCATTGGC ACTAAGTTT AGAAAAGAAG AAGGGCTCTT TTAATAATCA CACAGAAAGT TGGGGGCCA  
GTTACAATC AGGAGTCTG CTCTGATCA TGTGACCTGC TCGTCAGTT CTTTCTGGC CAACCCAAAG AACATCTTTC  
CCATAGGCAT CTTTGTCCCT TGCCCCACAA AAATCTTCT TTCTCTTTC GTGAGAGTGT TAGATCCCAA AAATTACCA  
AAGAAGAGA TGAAGAGCG ATTTGCTTC AACAAGTAT GAATCAATAA CAAGCTGGA TTTGATGCTG CCGAGTTCCC  
CAACTGGTAC ATCAGCACCT CTCAAGCAGA AAACATGCCC GTTCTCTGG GAGGGACCAA AGGCGGCCAG GATATACTG  
ACTTACCAT GCAATTTGTG TCTTCTAAA GAGAGCTGTA CCCAGAGAGT CTTGTGCTGA ATGTGGACTC AATCCCTAGG  
GCTGGCAGAA AGGGAACAGA AAGGTTTTG AGTACGGCTA TAGCTGGAC TTTCTGTTG TCTACACAA TGCCCACTG  
CCTGCTTAG GGTAGTGCTA AGAGGATCTC CTGTCCATCA GCCAGGACAG TCAGCTCTCT CTTTCTAGG CCAATCCCCA  
GCCCTTTTGT TGAGCCAGGC CTCTCTACC TCTCTACTC ACTTAAAGCC CGCTGACAG AAACCACGGC CACATTTGGT  
TCTAAGAAC CCTCTGTCT TCGTCCAC ATCTGATGA GCAACGCTT CCCTATTAT TTATTTATTT GTTTGTTGT  
TTTGATTCAT TGTCTAAT TATTCAAAG GGGCAAGAAG TAGCAGTGTG TGTAAGAGAG CTAGTTTAT AATAGTATG  
GAATCAATTC AATTTGGACT GGTGTGCTCT CTTTAAATCA AGTCTTTAA TTAAGACTGA AAATATATAA GCTCAGATTA  
TTTAAATGGG AATATTTATA AATGAGCAAA TATCATACTG TTCAATGGT CTGAAATAA CTTCAGTGA GAAAAAATA  
AAAGGGTCTC TCCTGATCAT TGAATGTCT GATTGACACT GACAGTAAGC AAACAGGCTG TGAGAGTTCT TGGGACTAAG  
CCCACTCTC ATTGCTGAGT GCTGCAAGTA CTAAGAAATA TCCTGGCCA CCGAAGACTA TCCTCTCAC CCATCCCTT  
TATTTCTGT TTAACAGAA GGATATTCTG TGCACATCTG GAACAGGATC AGCTGAAGCA CTGCAAGGAG TCAGGACTGG  
TAGTAACAGC TACCATGATT TATCTATCAA TGACCAAAAC ATCTGTTGAG CAAGCGCTAT GTACTAGGAG CTGGAGTAC  
AGAGATGAGA ACAGTCACAA GTCCCTCTC AGATAGGAGA GCGAGCTAGT TATAAGCAGA ACAAGGTAAC ATGACAAGTA  
GAGTAAGATA GAAGAACGAA GAGGAGTAGC CAGGAAGGAG GGAGGAGAAC GACATAAGAA TCAAGCCTAA  
AGGGATAAAC AGAAGATTT CACACATGGG CTGGGCCAAT TGGGTGCTCG TTACGCTGT AATCCAGCA CTTGGGTGG  
CAGGGGCAGA AAGATCGCT GAGCCAGGA GTTCAAGACC AGCTGGGCA ACATAGTGAG ACTCCATCT CTACAAAAA  
TAAATAAATA AATAAACAA TCAGCCAGGC ATGCTGGCAT GCACCTGTAG TCCTAGCTAC TTGGGAAGCT GACACTGGAG

GATTGCTTGA GCCCAGAAGT TCAAGACTGC AGTGAGCTTA TCCGTTGACC TGCAGGTCGA C-3' (FRAG. NO: )(SEQ. ID NO:2512)

5'-ACAAACCTTT TCGAGGCAAA AGGCAAAAAA GGCTGCTCTG GGATTCTCTT CAGCCAATCT TCAATGCTCA AGTGTCTGAA GCAGCCATGG CAGAAGTACC TAAGCTCGCC AGTGAAATGA TGGCTTATTA CAGTGGCAAT GAGGATGACT TGTTCTTTGA AGCTGATGGC CCTAACAGA TGAAGTGCTC CTTCAGGAC CTGGACCTCT GCCCTCTGGA TGGCGGCATC CAGCTACGAA TCTCCGACCA CCACTACAGC AAGGGCTTCA GGCAGGCCGC GTCAGTTGTT GTGGCCATGG ACAAGCTGAG GAAGATGCTG GTTCCCTGCC CACAGACCTT CCAGGAGAAT GACCTGAGCA CCTTCTTTCC TTTCATCTTT GAAGAAGAAC CTATCTTCTT CGACACATGG GATAACGAGG CTTATGTGCA CGATGCACCT GTACGATCAC TGAAGTGCAC GCTCCGGGAC TCACAGCAAA AAAGCTTGGT GAATGCTGGT CCATATGAACT TGAAGCTCT CCACCTCCAG GGACAGGATA TGGAGCAACA AGTGGTGTTC TCCATGTCTT TTGTACAAGG AGAAGAAAGT AATGACAAAA TACCTGTGGC CTGCGGCCTC AAGGAAAAAG ATCTGTACCT GTCTGCGTG TTGAAAGATG ATAAGCCAC TCTACAGCTG GAGAGTGTAG ATCCCAAAAA TTACCCAAAG AAGAAGATGG AAAAGCGATT TGTCTTCAAC AAGATAGAAA TCAATAACAA GCTGGAATTT GAGTCTGCCC AGTTCCCAAA CTGGTACATC AGCACCTCTC AAGCAGAAAA CATGCCCGTC TTCCTGGGAG GGACCAAAAG CGGCCAGGAT ATAAGTACT TCACCATGCA ATTTGTGTCT TCCTAAAGAG AGCTGTACCC AGAGAGTCTT GTGCTGAATG TGGACTCAAT CCCTAGGGCT GGCAGAAAGG GAACAGAAAG GTTTTGTAGT ACGGCTATAG CCTGGACTTT CCTGTTGTCT ACACCAATGC CCAACTGCCT GCCTTAGGGT AGTGCTAAGA GGATCTCTGT TCCATCAGCC AGGACAGTCA GCTCTCTCTT TCCAGGGCCA ATCCAGGCC TTTTGTGTAG CCAGGCTCT CTACCTCTC CTACTCACTT AAAGCCCGCC TGACAGAAAC CAGGCCACAT TTTGTTTCTA AGAAACCTCT CTGTGTCATT CGCTCCACA TTCTGATGAG CAACCGCTC CCTATTATT TATTTATTG TTTGTTTGT TTGATTCAAT GGTCTAATTT ATTCAAAGGG GGCAAGAAGT AGCAGTGTCT GTAAAAGAGC CTAGTTTTTA ATAGCTATGG AATCAATTCA ATTTGGACTG GTGTGCTCTC TTAAATCAA GTCCTTTAAT TAAGACTGAA AATATATAAG CTCAGATTAT TTAATGGGA ATATTATAA ATGAGCAAT ATCATACTGT TCAATGGTTC TCAATAAAC TTCCT-3' (FRAG. NO: )(SEQ. ID NO:2513)

5'-CTGGCAGGAG TAGCAGCTGC CCTTGGCG GACTGCTGGA GCCCGAAT AGAGAAAC AGACACGCTT CATAGAGCAA CGGCGTCTCT CGGAGCGTGG AGCCCGCAA GCTCGAGCTG AGCTTTCGCT TGCCGTCCAC CACTGCCAC ACTGTCTGTT GCTGCCATCG CAGACCTGCT GCTGACTTCC ATCCCTCTGG ATCCGGCAAG GGCCTGCGAT TTTGACAATG TCAAGATTTA CCGTATATCC CTGTTTGTIT GGATACACCA GTGACGTCCA CTCTAGAAG ACAAAGTTAT ATTACTTAAA CAACCAAAGA TATGAACTA TCCATGAAGA ACAATATTAT CAATACACAG CAGTCTTTTG TAACCATGCC CAATGTGATT GTACCAATA TTGAAAAGGA AATACGAAGG ATGGAAGG GAGCATGCG CTTCTTTTCT GAGGATGATG ACAGTGCCCT TACATCTGAA GAATCAGAGA ATGAAAACCC TCATGCAAGG GGTTCCTTTA GTTATAAGT ACTCAGAAAG GGAGGACCAT CACAGAGGGA GCAGTACCTG CCTGGTGCCA TTGCCATTTT TAATGTGAAC AACAGCGACA ATAAAGGACA GGAACCAAG GAAAAAAGA AAAAGAAAA AGAAAGAAAG AGCAAGTCAG ATGATAAAAA CGAAATAAA AACGACCAA AGAAGAAGAT GGAAAAGCGA-3' (FRAG. NO: )(SEQ. ID NO:2514)

5'-ATGGCCAAAG TTCCAGACAT GTTTGAAGAC CTGAAGAACT GTTACAGTGA AAATGAAGAA GACAGTTCCT CCATTGATCA TCTGTCTCTG AATCAGAAAT CCTTCTATCA TGTAAGCTAT GGCCCACTCC ATGAAGGCTG CATGGATCAA TCTGTGCTC TGAGTATCTC TGAAACCTCT AAAACATCCA AGCTTACCTT CAAGGAGAGC ATGGTGGTAG TAGCAACCAA CGGGAAGGTT CTGAAGAAGA GACGGTTGAG TTTAAGCCAA TCCATCACTG ATGATGACCT GGAGGCCATC GCCAATGACT CAGAGGAAGA AATCATCAAG CTTAGGTCAG CACCTTTTAG CTCTCTGAGC AATGTGAAAT ACAACTTTAT GAGGATCATC AAATACGAAT TCATCTGAA TGACGCCCTC AATCAAAGTA TAATTCGAGC CAATGATCAG TACCTCACGG CTGCTGCATT ACATAATCTG GATGAAGCAG TGAAATTTGA CATGGGTGCT TATAAGTCAT CAAAGGATGA TGCTAAAATT ACCGTGATTC TAAGAATCTC AAAAATCAA TTGTATGTGA CTGCCAAGA TGAAGACCAA CCAGTGTCTG TGAAGGAGAT GCCTGAGATA CCAAAACCA TCACAGGTAG TGAGACCAAC CTCCTCTTCT TCTGGGAAAC TCACGGCACT AAGAATATT TCACATCAGT TGCCCATCCA AACTTGTTA TTGCCACAAA GCAAGACTAC TGGGTGTGCT TGGCAGGGGG GCCACCCTCT ATCACTGACT TTCAGATACT GGAAAACCA GCGTAGGTCT GGAGTCTCAC TTGTCTCACT TGTGCACTGT TGACAGTTCA TATGTACCAT GTACATGAAG AAGCTAAATC CTTTACTGTT AGTCATTGTC TGAGCATGTA CTGAGCCTTG TAATTCTAAA TGAATGTTA CACTCTTTGT AAGAGTGGAA CCAACACTAA CATATAATGT TGTTATTTAA AGAACACCCT ATATTTTGCA TAGTACCAAT CATTTTAATT ATTATCTTC ATAACAATTT TAGGAGGACC AGAGCTACTG ACTATGGCTA CCAAAAAGAC TCTACCCATA TTACAGATGG GCAAATTAAG GCATAAGAAA ACTAAGAAAT ATGCACAATA GCAGTTGAAA CAAGAAGCCA CAGACCTAGG ATTTATGAT TTCATTTCAA CTGTTTGCTT TCTGCTTTTA AGTTGCTGAT GAACTCTTAA TCAATAGCA TAAGTTTCTG GGACCTCAGT TTTATCATT TCAAAATGGA GGAATAATA CTAAGCCTT CTGCGGCAA CAGTTTTTTA TGCTAATCAG GGAGGTCAAT TTGGTAAAAT ACTTCTCGAA GCCGAGCCTC AAGATGAAG CAAAGCACGA AATGTTATTT TTTAATTATT ATTTATATAT GTATTTATAA ATATATTTAA GATAATTATA ATATACTATA TTTATGGGAA CCCCTTCATC CTCTGAGTGT GACCAGGCAT CCTCCACAAT AGCAGACAGT GTTTCTGCG ATAAGTAAGT TTGATTTTCA TAATACAGGG CATTTTGGTC CAAGTTGTGC TTATCCCAT GCCAGGAAAC TCTGCACTT AGTACTTGG AGACCTGTAA TCATATAATA AATGTACATT AATTACCTTG AGCCAGTAAT TGGTCCGATC TTTGACTCTT TTGCCATTAA ACTTACCTGG GCATTCTTGT TTCATTCAAT TCCACCTGCA ATCAAGTCTT ACAAGCTAAA ATTAGATGAA CTCAACTTTG ACAACCATAG ACCACTGTTA TCAAACTTT CTTTCTGGA ATGTAATCAA TGTTCTTCT AGGTCTTAAA AATTGTGATC AGACCATAAT GTTACATTAT TATCAACAAT AGTGATTGAT AGAGTGTTAT CAGTCATAAC TAAATAAAGC TTGCAAGTGA GGGAGTCATT TCATTGGCGT TTGAGTCAGC AAAGAAGTCA AG-3' (FRAG. NO: )(SEQ. ID NO:2515)

5'-AGCTGCCAGC CAGAGAGGGA GTCATTTTCA TGGCGTTTGA GTCAGCAAAG AAGTCAAGAT GGCCAAAGTT CCAGACATGT TTGAAGACCT GAAGAAGTGT TACAGTGAAG ATGAAGAAGA CAGTTCTCTC ATTGATCATC TGCTCTGAA TCAGAAATCC TTCTATCATG TAAGCTATGG CCCACTCCAT GAAGGCTGCA TGGATCAATC TGTGTCTCTG AGTATCTCTG AAACCTCTAA AACATCCAAG CTTACCTTCA AGGAGAGCAT GGTGGTAGTA GCAACCAACG GGAAGGTTCT GAAGAAGAGA CGGTTGAGTT TAAGCCAATC CATCACTGAT GATGACCTGG AGGCCATCGC CAATGACTCA GAGGAAGAAA TCATCAAGCC TAGGTCATCA CCTTTTAGCT TCCTGAGCAA TGTGAAATAC AACTTTATGA GGATCATCAA ATACGAATTC ATCCTGAATG

ACGCCCTCAA TCAAAGTATA ATTCGAGCCA ATGATCAGTA CCTCACGGCT GCTGCATTAC ATAATCTGGA TGAAGCAGTG  
 AAATTTGACA TGGGTGCTTA TAAGTCATCA AAGGATGATG CTAAAATTAC CGTGATTCTA AGAATCTCAA AAATCAATT  
 GTATGTGACT GCCAAGATG AAGACCAACC AGTGCTGCTG AAGGAGATGC CTGAGATACC CAAAACCATC ACAGGTAGTG  
 AGACCAACCT CCTCTTCTC TGGGAAACTC ACGGCACTAA GAACTATTTC ACATCAGTTG CCCATCCAAA CTGTGTTATT  
 GCCACAAAGC AAGACTACTG GGTGTGCTTG GCAGGGGGGC CACCCTCTAT CACTGACTTT CAGATACTGG AAAACCAGGC  
 GTAGGTCTGG AGTCTCACTT GTCTCACTTG TGCAGTGTTG ACAGTTCATA TGTACCATGT ACATGAAGAA GCTAAATCCT  
 TTAATGTTAG TCATTGCTG AGCATGTACT GAGCCTTGTA ATTCTAAATG AATGTTTACA CTCTTTGTAA GAGTGGAAACC  
 AACACTAACA TATAATGTTG TTATTTAAAG AACACCCTAT ATTTTGCATA GTACCAATCA TTTAATTAT TATTCTTCAT  
 AACAATTTTA GGAGGACCAG AGCTACTGAC TATGGCTACC AAAAAGACTC TACCCATATT ACAGATGGGC AAATTAAGGC  
 ATAAGAAAAC TAAGAAATAT GCACAATAGC AGTCGAAACA AGAAGCCACA GACCTAGGAT TTCATGATTT CATTCAACT  
 GTTTCCTTC TGCTTTAAG TTGCTGATGA ACTCTTAATC AAATAGCATA AGTTTCTGGG ACCTCAGTTT TATCATTTTC  
 AAAATGGAGG GAATAATACC TAAGCCTTCC TGCCGCAACA GTTTTTATG CTAATCAGGG AGGTCATTTT GGTAATAATAC  
 TTCTCGAAGC CGAGCCTCAA GATGAAGGCA AAGCACGAAA TGTTATTTT TAATTATTAT TTATATATGT ATTTATAAAT  
 ATATTTAAGA TAATTATAAT ATACTATATT TATGGGAACC CCTTCATCCT CTGAGTGTGA CCAGGCATCC TCCACAATAG  
 CAGACAGTGT TTTCTGGGAT AAGTAAGTTT GATTTCATTA ATACAGGGCA TTTTGGTCCA AGTTGTGCTT ATCCCATAGC  
 CAGGAAACTC TGCATTCTAG TACTTGGGAG ACCTGTAATC ATATAATAAA TGTACATTAA TTACCTTGAG CCAGTAATTG  
 GTCCGATCTT TGACTCTTTT GCCATTAAAC TTACCTGGGC ATTCTTGTTT CATTCATTC CACCTGCAAT CAAGTCCTAC  
 AAGCTAAAAT TAGATGAAC CAACCTTGAC AACCATGAGA CCACTGTTAT CAAAACCTTC TTTTCTGGAA TGTAATCAAT  
 GTTCTCTCTA GGTCTAAAA ATTGTGATCA GACCATAAT TTACATTATT ATCAACAATA GTGATTGATA GAGTGTATC  
 AGTCATAACT AAATAAGCT TGCAACAAAA TTCTCTG-3' (FRAG. NO: 2516)

#### Human Interleukin-1 Receptor (IL-1 R) Nucleic Acids and Anti-sense Oligonucleotide Fragments

5'-GCCACGTGCT GCTGGGTCTC AGTCCTCCAC TTCCCGTGTC CTCTGGAAGT TGTCAGGAGC AATGTTGCGC TTGTACGTGT  
 TGGTAATGGG AGTTTCTGCC TTCACCCTTC AGCTGCGGC ACACACAGGG GCTGCCAGAA GCTGCCGGTT TCGTGGGAGG  
 CATTACAAGC GGGAGTTCAG GCTGGAAGGG GAGCCTGTAG CCCTGAGGTG CCCCAGGTG CCCTACTGTT TGTGGGCTC  
 TGTACGCCCC CGCATCAACC TGACATGGCA TAAAAATGAC TCTGTAGGA CGGTCCAGG AGAAGAAGAG ACACGGATGT  
 GGGCCAGGA CGGTGCTCTG TGGCTTCTGC CAGCCTTGCA GGAGGACTCT GGCACCTACG TCTGCACTAC TAGAAATGCT  
 TCTTACTGTG AAAAAATGTC CATTGAGCTC AGAGTTTTTG AGAATACAGA TGCTTTCCTG CCGTTCATCT CATACCCGCA  
 AATTTTAACC TTGTCAACCT CTGGGGTATT AGTATGCCCT GACCTGAGTG AATTCACCCG TGACAAAAC GACGTGAAGA  
 TTCAATGGTA CAGGATTCT CTCTTTTGG ATAAAGACAA TGAGAAATTT CTAAGTGTGA GGGGGACCAC TCACTTACTC  
 GTACACGATG TAAGCCTGGA AGATGCTGGC TATTACCGT GTGTCTGAC ATTTGCCCCA GAAGGCCAGC AATACAACAT  
 CACTAGGAGT ATTGAGCTAC GCATCAAGAA AAAAAAGAA GAGACCAATC CTGTGATCAT TTCCCCCTC AAGACCATAT  
 CAGCTTCTCT GGGGTCAAGA CTGACAATCC CGTGTAAAGT GTTCTGTTG ACCGGCACAC CCTTAACCAC CATGCTGTGG  
 TGGACGGCCA ATGACACCCA CATAGAGAGC GCCTACCCGG GAGGCGCGT GACCGAGGGG CCACGCCAGG AATATTCAGA  
 AAATAATGAG AACTACATTG AAGTGCCATT GATTTTGTAT CTGTACAAA GAGAGGATT GCACATGGAT TTTAAATGTG  
 TTGTCCATAA TACCCTGAGT TTTCAGACAC TACGCACCAC AGTCAAGGAA GCCTCCTCCA CGTTCTCCTG GGGCATTGTG  
 CTGGCCCCAC TTTCACTGCC CTCTTGTTT TTGGGGGAA TATGGATGCA CAGACGGTGC AAACACAGAA CTGGAAGAGC  
 AGATGGTCTG ACTGTCTAT GGCCTCATCA TCAAGACTTT CAATCCTATC CCAAGTGAAA TAAATGGAAT GAAATAATTC  
 AAACACAAAA AAAAAAAAAA AAAAAA GCGGAGCCG ACTCGGAGCG CGCGGCGCGG CCGGGAGGAG CCGAGCGCGC  
 CGGGCGCGG GTGGGGCGC CGGCTGCCCC GCGCGCCAG GGAGCGGCG GAATGTGACA ATCGCGCGCC CGCACCCTAG  
 CACTCTCGC TCGCTCCTA GGGCTCTCGC CCTCTGAGT GAGCCGGGT CCGCCGGGC TGGGATCCCA TCACCTCCA  
 CGGCCGTCCG TCCAGGTAGA CGCACCCTCT GAAGATGGT ACTCCCTCT GAGAAGCTGG ACCCTTGGT AAAAGACAAG  
 GCCTTCTCA AGAAGATAT GAAAGTTTA CTCAGCTTA TTTGTTTAT AGCTTACTG ATTTCTTCT TGGAGCTGA  
 TAAATGAAG GAACGTGAAG AAAAAATAAT TTAGTGTCA TCTGCAATG AAATTGATGT TCGTCCCTGT CTCTTAAAC  
 CAAATGAACA CAAAGGCACT ATAACCTGGT ATAAAGATGA CAGCAAGACA CCTGTATCTA CAGAACAAGC CTCCAGGATT  
 CATCAACACA AAGAGAACT TTGTTTGTG CTGCTAAGG TGGAGGATT AGGACATTAC TATTGCGTG TAAGAAATTC  
 ATCTTACTGC CTCAGAATTA AAATAAGTGC AAAATTTGTG GAGAATGAG CTAACCTATG TTATAATGCA CAAGCCATAT  
 TTAAGCAGAA ACTACCCGTT GCAGGAGAGC GAGGACTGT GTGCCCTTAT ATGGAGTTTT TAAAAATGA AAATAATGAG  
 TTACCTAAAT TACAGTGGTA TAAGGATTGC AAACCTCTAC TTCTTGACAA TATACACTTT AGTGGAGTCA AAGATAGGCT  
 CATCGTGATG AATGTGGCTG AAAAGCATAG AGGGAACCTAT ACTGTCTATG CATCCTACAC ATACTGGGC AAGCAATATC  
 CTATTACCCG GGTAATAGAA TTTATTACTC TAGAGGAAAA CAAACCCACA AGGCCTGTGA TTGTGAGCCC AGCTAATGAG  
 ACAATGGAAG TAGACTTGGG ATCCAGATA CAATTGATCT GTAATGTCAC CGGCCAGTTG AGTGACATTG CTACTGGAA  
 GTGGAATGGG TCAGTAATTG ATGAAGATGA CCAAGTGTGA GGGGAAGACT ATTACAGTGT GGAAAATCCT GCAACAAAA  
 GAAGGAGTAC CCTCATCACA GTGCTTAATA TATCGGAAAT TGAAAGTAGA TTTTATAAAC ATCCATTAC CTGTTTGGC  
 AAGAATACAC ATGGTATAGA TGCAGCATAT ATCCAGTTAA TATATCCAGT CACTAATTT CAGAAGACA TGATTGGTAT  
 ATGTGTCACG TTGACAGTCA TAATTGTGTG TTCTGTTTC ATCTATAAAA TCTTCAAGT TGACATTGTG CTTTGGTACA  
 GGGATTCTG CTATGATTTT CTCCCAATAA AAGCTTCAGA TGGAAAGACC TATGACGCAT ATACTGTGA TCCAAAGACT  
 GTTGGGGAAG GGTCTACCTC TGACTGTGAT ATTTTGTGT TTAAGTCTT GCCTGAGGTC TTGGAAAAAC AGTGTGGATA  
 TAAGCTGTTT ATTTATGGA GGGATGACTA CGTTGGGGAA GACATTGTT AGGTCATTAA TGAAAACGTA AAGAAAAGCA  
 GAAGACTGAT TATCATTTTA GTCAGAGAAA CATCAGGCTT CAGCTGGCTG GGTGGTTTAT CTGAAGAGCA AATAGCCATG  
 TATAATGCTC TTGTTCAAGG TGGAATTTAA GTTGTCTGCT TTGAGCTGGA GAAAATCCAA GACTATGAGA AAATGCCAGA  
 ATCGATTAAA TTTAATAAGC AGAAACATGG GGCTATCCG TGGTCAGGGG ACTTTACACA GGGACCACAG TCTGCAAGA  
 CAAGGTTCTG GAAGAATGTC AGGTACCACA TGCCAGTCCA GCGACGGTCA CCTTCATCTA AACACAGATT ATGTGACCA  
 GCCACTAAGG AGAACTGCA AAGAGAGGCT CAGTGCTC TCGGGTAGCA TGGAGAAGTT GCCAAGAGTT CTTAGGTGC  
 CTCCTGTCTT ATGGCGTTGC AGGCCAGGT ATGCCTCATG CTGACTTGCA GAGTTCATGG AATGTAATA TATCATCTT  
 TATCCCTGAG GTCACCAGGA ATCAGG-3' (FRAG. NO: 2521)

5'-GCCACGTGCT GCTGGGCTC AGTCCTCCAC TTCCCGTGTC CTCTGGAAGT TGTCAGGAGC AATGTTGCGC TTGTACGTGT  
TGGTAATGGG AGTTTCTGCC TTCACCTTC AGCCTGCGGC ACACACAGGG GCTGCCAGAA GCTGCCGGTT TCGTGGGAGG  
CATTACAAGC GGGAGTTTCAG GCTGGAAGGG GAGCCTGTAG CCTGAGGTG CCCCAGGTG CCTACTGGT TGTGGGCTC  
TGTCAGCCCC CGCATCAACC TGACATGGCA TAAAAATGAC TCTGCTAGGA CGGTCCCAGG AGAAGAAGAG ACACGGATGT  
GGGCCAGGA CGGTGCTCTG TGGCTTCTGC CAGCCTTGCA GGAGGACTCT GGCACCTACT TCTGCACTAC TAGAAATGCT  
TCTTACTGTG ACAAATGTC CATTGAGCTC AGAGTTTTG AGAATACAGA TGCTTTCCTG CCGTTCATCT CATACCCGCA  
AATTTTAACC TTGTCAACCT CTGGGGTATT AGTATGCCCT GACCTGAGTG AATCAACCCG TGACAAAAC GACGTGAAGA  
TTCAATGGTA CAAGGATTCT CTCTTTTGG ATAAAGACAA TGAGAAATTT CTAAGTGTGA GGGGGACCAC TCACTTACTC  
GTACACGATG TGGCCCTGGA AGATGCTGGC TATTACCGCT GTGCTCTGAC ATTTGCCCAT GAAGGCCAGC AATACAACAT  
CACTAGGAGT ATTGAGCTAC GCATCAAGAA AAAAAAGAA GAGACCATT CTGTGATCAT TTCCCCCTC AAGACCATAT  
CAGCTTCTCT GGGGTCAAGA CTGACAATCC CGTGAAGGT GTTCTGGGA ACCGGCACAC CCTTAACCAC CATGCTGTGG  
TGGACCGCCA ATGACACCCA CATAGAGAGC GCTTACCCGG GAGGCGCGGT GACCGAGGGG CCACGCCAGG AATATTCAGA  
AAATAATGAG AACTACATTG AAGTGCCATT GATTTTGTAT CTGTGACAA GAGAGGATTT GCACATGGAT TTAAAAATGTG  
TTGTCCATAA TACCCTGAGT TTTCAGACAC TACGACCAC AGTCAAGGAA GCCTCTCTCA CGTCTCTCTG GGGCATTGTG  
CTGGCCCCAC TTTCATCTGGC CTCTTGGTT TTGGGGGGAA TATGGATGCA CAGACGGTGC AAACACAGAA CTGAAAAAGC  
AGATGGTCTG ACTGTGCTAT GGCCTCATCA TCAAGACTTT CAATCCTATC CCAAGTGAAA TAAATGGAAT GAAATAATTC  
AAACACAAAA AAAAAAAAAA AAAAAA-3' (FRAG. NO: ) (SEQ. ID NO:2518)

5'-GCCGGAGCCG ACTCGGAGCG CGCGGCGCGG CCGGAGGAGC CCGAGCGCGC CGGGCGCGGC GTGGGGGCGC  
CGGCTGCCCC GCGCGCCAG GGAGCGGCAG GAATGTGACA ATCGCGCGCC CGCACCGTAG CACTCTCGC TCGGCTCCTA  
GGGCTCTCGC CCTCTGAGCT GAGCCGGGT CCGCCCGGGC TGGGATCCCA TCACCCTCCA CGGCCGTCCG TCCAGGTAGA  
CGCACCTCT GAAGATGGTG ACTCCCTCT GAGAAGCTGG ACCCTTGGT AAAAGACAAG GCCTTCTCCA AGAAGAATAT  
GAAAGTGTA CTCAGACTTA TTGTTCAT AGCTCTACTG ATTTCTCTC TGGAGGCTGA TAAATGCAAG GAACGTGAAG  
AAAAATAAT TTAGTGTA TCTGCAATG AAATTGATGT TCGTCCCTGT CCTCTTAACC CAAATGAACA CAAAGGCACT  
ATAACTGGT ATAAAGATGA CAGCAAGACA CCTGTATCA CAGAACAAGC CTCCAGGATT CATCAACACA AAGAGAACT  
TTGGTTTGT CTGCTAAGG TGGAGGATT CAGCACTTAC TATTGCTGG TAAGAAATTC ATCTTACTGC CTCAGAATTA  
AAATAAGTG AAAATTTGTG GAGAATGAGC CTAACCTATG TTATAATGCA CAAGCCATAT TTAAGCAGAA CCTACCGTT  
GCAGGAGACG GAGGACTTGT GTGCCCTTAT ATGGAGTTT TAAAAATGA AAATAATGAG TTACCTAAAT TACAGTGGTA  
TAAGGATTGC AAACCTCTAC TTCTTGACAA TATACAGTT AGTGGAGTCA AAGATAGGCT CATCGTGATG AATGTGGCTG  
AAAAGCATAG AGGGAACAT ACTTGTCTATG CATCTACAC ATACTTGGG AAGCAATATC CTATTACCCG GGTAATAGAA  
TTTATTACT TAGAGGAAAA CAAACCCACA AGGCTGTGA TTGTGAGCCC AGCTAATGAG ACAATGGAAG TAGACTTGGG  
ATCCAGATA CAATTGATCT GTAATGTAC CGCCAGTTG AGTGACATTG CTTACTGGAA GTGGAATGGG TCAGTAATTG  
ATGAAGATGA CCCAGTGCTA GGGGAAGACT ATTACAGTGT GGAATACTCT GCAACAAAA GAAGAGTAC CCTCATCTA  
GTGCTTAATA TATCGGAAAT TGAAAGTAGA TTTTATAAAC ATCCATTAC CTGTTTTGCC AAGAATACAC ATGGTATAGA  
TGCAGCATAT ATCCAGTTAA TATATCCAGT CACTAATTC CAGAAGCACA TGATTGGTAT ATGTGTCACG TTGACAGTCA  
TAATTGTGT TTCTGTTTT ATCTATAAAA TCTTCAAGAT TGACATTGT CTTTGGTACA GGGATTCTG CTATGATTTT  
CTCCCAATAA AAGCTTCAGA TGAAAGACC TATGACGCAT ATATACTGTA TCCAAAGACT GTTGGGGAAG GGTCTACCTC  
TGACTGTGAT ATTTTGTGT TTAAGTCTT GCCTGAGGTC TTGGAATAAC AGTGTGGATA TAAGCTGTT ATTTATGGA  
GGGATGACTA CGTTGGGGAA GACATTGTTG AGGTCATTAA TGAAACGTA AAGAAAAAGCA AAGAGTATGAT TATCATTTTA  
GTCAGAGAAA CATCAGGCTT CAGCTGGCTG GGTGGTTCAT CTGAAGAGCA AATAGCCATG TATAATGCTC TTGTTCAAGG  
TGGAATTAATA GTTGTCTGCTG TTGAGCTGGA GAAAATCCAA GACTATGAGA AAATGCCAGA ATCGATTAAA TTCATTAAGC  
AGAAACATGG GGCTATCCGC TGGTCAGGGG ACTTTACACA GGGACCACAG TCTGCAAGA CAAGGTCTG GAAGAATGTC  
AGGTACCACA TGCCAGTCCA GCGACGGTCA CCTTCATCTA AACACAGTT ACTGTACCA GCCACTAAGG AGAACTGCA  
AAGAGAGGCT CAGGTGCCTC TCGGCTAGCA TGGAGAAGTT CCAAGAGTT CTTAGGTGC CTCCTGTCTT ATGGCGTTGC  
AGGCCAGGTT ATGCCTCATG CTGACTTGCA GAGTTCATGG AATGTAATA TATCATCCTT TATCCCTGAG GTCACCAGGA  
ATCAGG-3' (FRAG. NO: ) (SEQ. ID NO:2519)

#### Human Interleukin-8\* Fragments Antisense Oligonucleotide Fragments

5'-GBTGTTTGT BCCBBBGBCT CBBGBBTBGC TTTGCTBTCT BBGBBCTCB TTBGBCBTB GBBBBCGCT GTBGGTCBGBB  
BGBTGCTT BCCTTCBCBC BGBGCTGCBG BBTCBGBBGG CTGCCBBGBBG CCBGCGCCBGC TTGGBGTCBT  
GTTTBCBCB BGBTGGGTGC TCCGGTGGCT TTTGCTTGT GTGCTCTGCT GTCTCTG TTC CTTCGGTGG TTCTTCTCTG  
GCTCTTGTCC TTCTCTTGG CCCTTGGCCC-3' (FRAG. NO:1834) (SEQ. ID NO:1845)

5'-G CTC CGG-3' (FRAG. NO:1835) (SEQ. ID NO:1846)

5'-CBBGBBTBGC-3' (FRAG. NO:1836) (SEQ. ID NO:1847)

5'-CBCBC BGTGBGGTGC-3' (FRAG. NO:1837) (SEQ. ID NO:1848)

5'-BCCBBBGBCT CBBGBBTBGC-3' (FRAG. NO:1838) (SEQ. ID NO:1849)

5'-GCCBBBGBG CCBGCGCCBGC-3' (FRAG. NO:1839) (SEQ. ID NO:1850)

5'-GTG CTC CGG TGG CTT TTT-3' (FRAG. NO:1289) (SEQ. ID NO:1299)

5'-GCT TGT GTG CTC TGC TGT CTC TG-3' (FRAG. NO:1290) (SEQ. ID NO:1300)

5'-TTC CTT CCG GTG GTT TCT TCC TGG CTC TTG TCC T-3' (FRAG. NO:1291) (SEQ. ID NO:1301)

5'-TTC TCT TGG CCC TTG GCC C-3' (FRAG. NO:1292) (SEQ. ID NO:1302)

5'-GBTGTTTGT BCCBBBGBCT CBBGBBTBGC TTTGCTBTCT BBGBBCTCB TTBGBCBTB GBBBBCGCT GTBGGTCBGBB  
BGBTGCTT BCCTTCBCBC BGBGCTGCBG BBTCBGBBGG CTGCCBBGBBG CCBGCGCCBGC TTGGBGTCBT  
GTTTBCBCB BGBTGGGTGC TCCGGTGGCT TTTGCTTGT-3' (FRAG. NO:1840) (SEQ. ID NO:1851)

#### Human IL-8 Receptor Alpha Antisense Oligonucleotide Fragments

5'-ACAGGGGCTG TAATCTTATC TGCAGGTGGC ATGCCAGTGA AATTTAGATC ATCAAAATCC CACATCTGTG  
GATCTGTAAT ATTTGACATG TCCTCTTAC TTTCAGCAAT GTTTTGATCT AACTGAAGCA CCGGCCAGGB CBGGGGCTGT  
BBTCTTCBTC TGCBGGTGGC BTGCCBGTGB BBTBTBGTB BTCBBBTCC CBCBTCTGTG GBTCTGTBBT BTTTGBCBTG  
TCCTCTCBG TTTCBGCBB TGGTTTGTB TBBCTGBBG BCCGGCCBG TGGCTCGGTG CTTCTGCCCC TGTGTGTCG  
GCGCTCGGTT GGTGTGGCCC CTGTGGTGCT TCGTTTCCCC CTCTTCTCT TTGTTGCGGG GTTCTGTGG CCGGCTGCTT  
GTCTCGTTCC-3'

(FRAG. NO:1841) (SEQ. ID NO:1852)

5'-CBGGGGC-3' (FRAG. NO:1842) (SEQ. ID NO:1853)

5'-GCBGGTGGC-3' (FRAG. NO:1843) (SEQ. ID NO:1854)

5'-GCGGCGCTC-3' (FRAG. NO:1844) (SEQ. ID NO:1855)

5'-TGGCTCGGTGCTTCTGCCCC (FRAG. NO:1293)(SEQ. ID NO:1303)

5'-TGTTGTGCGGCGCTC (FRAG. NO:1294)(SEQ. ID NO:1304)

5'-GGTTGGTGTGGCCCTG (FRAG. NO:1295)(SEQ. ID NO:1305)

5'-TGGTGTCTCGTTTCC (FRAG. NO:1296)(SEQ. ID NO:1306)

5'-CCCTCTTCTCTTTGTTT (FRAG. NO:1297)(SEQ. ID NO:1307)

5'-GGGGTCTTGTGGC (FRAG. NO:1298)(SEQ. ID NO:1308)

5'-GGGCTGCTTGTCTCGTTCC (FRAG. NO:1299)(SEQ. ID NO:1309)

5'-ACAGGGGCTG TAATCTTCATC TGCAGGTGGC ATGCCAGTGA AATTTAGATC ATCAAAATCC CACATCTGTG  
GATCTGTAAT ATTTGACATG TCCTCTTCAG TTCAGCAAT GGTTTGATCT AACTGAAGCA CCGGCCAGG-3' (FRAG.  
NO:1845) (SEQ. ID NO:1856)

5'-B CBGGGGCTGT BBTCTTCBTC TGCBBGTGGC BTGCCBTGB BBTBTBGBTC BTCBBBTCC CBCBTCTGTG GBTCTGTBBT  
BTBTGCBTG TCCTCTTCBG TTCBGCBB TGGTTTGBTC TBBCTGBBGC BCGGCCBGG-3' (FRAG. NO:1846) (SEQ. ID  
NO:1857)

#### Interleukin-11 (IL-11) Nucleic Acid and Antisense Oligonucleotide Fragments

5'-GCTCAGGGCA CATGCCTCCC CTCCCCAGGC CGCGGCCAG CTGACCCTCG GGGCTCCCC GGCAGCGGAC  
AGGGAAGGGT TAAAGGCCCC CGGCTCCCTG CCCCCTGCCC TGGGGAACCC CTGGCCCTGT GGGGACATGA ACTGTGTTG  
CCGCTGGTC CTGGTCGTGC TGAGCCTGTG GCCAGATACA GCTGTGCCCC CTGGGCCACC ACCTGGCCCC CCTCGAGTTT  
CCCCAGACCC TCGGGCCGAG CTGGACAGCA CCGTGCTCT GACCCGCTCT CTCCTGGCGG ACACGCGGCA GCTGGCTGCA  
CAGCTGAGGG ACAAATTCCC AGCTGACGGG GACCACAACC TGGATTCCCT GCCACCCTG GCCATGAGTG CGGGGGCACT  
GGGAGCTCTA CAGTCTCCAG GTGTGCTGAC AAGGTGCGA GCGGACCTAC TGTCTACCT GCGGCACGTG CAGTGGCTGC  
GCCGGGCAGG TGGCTCTTCC CTGAAGACCC TGGAGCCGA GCTGGGCACC CTGCAGGCC GACTGGACCG GCTGCTGCGC  
CGGCTGCAGC TCCTGATGTC CCGCTGGCC CTGCCCCAGC CACCCCGGA CCCGCCGGC CCCCCGCTGG CGCCCCCTC  
CTCAGCCTGG GGGGGCATCA GGGCCGCCA CGCCATCTG GGGGGGCTGC ACCTGACACT TGACTGGGCC GTGAGGGGAC  
TGCTGCTGCT GAAGACTCGG CTGTGACCCG GGGCCCAAAG CCACCACCGT CCTTCCAAAG CCAGATCTTA TTTATTTATT  
TATTTAGTA CTGGGGGCGA AACAGCCAGG TGATCCCCC GCCATTATCT CCCCTAGTT AGAGACAGTC CTTCCTGAG  
GCCTGGGGGA CATCTGTGCC TTATTTATAC TTATTTATTT CAGGAGCAGG GGTGGGAGGC AGGTGGACTC ETGGGTCCCC  
GAGGAGGAGG GGAAGGGGT CCCGATTCT TGGGTCTCCA AGAAGTCTGT CCACAGACTT CTGCCCTGGC TCTTCCCCAT  
CTAGGCCTGG GCAGGAACAT ATATTATTTA TTTAAGCAAT TACTTTTCAT GTTGGGGTGG GGACGGAGGG GAAAGGGAAG  
CCTGGGTTTT TGTACAAAAA TGTGAGAAAC CTTTGTGAGA CAGAGAACAG GGAATTAAAT GTGTCATACA TATCC  
CAGCTGCGGC ATCCTCTGTC TCAGAGTCTT GGTGTCTCTG TTCCTTTCCC CTCGGGGTCT CCCTGGGTCT CCCCAGTCC  
CTCCTGCTGT CTCCTCCC CTCTCTGATC TCTGACTCCC AGAACCTCTC CCTCTGTCTC CAGGGCTGCC CCTCTGATCC  
TCTTTGCTT TCTGGTGTGT CTCTCTGGCT GCCTCCATCT CTGTGGATCT CCGTCTCCCT GTCTCTGTCT CAGTCTGTCC  
TTCACITCTGT GTGTGTGTGT GTCTCTCTCT CTCTCTCTCC TTCCCTTCCA CTCCCTCTC CTCCTGCTC CACCTCTCCA  
GGCCCCGTC TTGTCCTCC GTCCGGCCTT TCTGTGCTT TCCGTCTCC TGCTCCCCA TCTCTCTCTG CTAGTCTGT  
CCAGCCGGAC CCCCACCCAC AGTCGGGGCC CAGCGTTGA GCCTGAGTGT CTGCTCCGGC CCGTGGAGGT GGAGGGAGGG  
GACGCCAATG ACCTACCAG CCCCTCTCCG ACCACCCCC CTTTCCCTT TTCAACTTTT CCAACTTTT CTTCCTGTC  
CTCCTCCGAG CGCGGGCGG TGAGCCCTGC AAGGCAGCCG CTCCTGTGA ATGGAAGAG CAGGCAGGGA GGGTGTGCA  
GGATGTGCA GGCGGGCCCT CCCCTGCCG CTGCCCCCG CCCGCCCGC CCAGGCCCC TATATAACCC CCCAGGCGTC  
CACACTCCT CACTGCCGCG GGCCCTGCTG CTCAGGGCAC ATGCTCCCC TCCCAGCCG CGGGCCAGC TGACCTCGG  
GGTCCCCCG GCAGCGGACA GGAAGGGTT AAAGGCCCCC GGCTCCCTGC CCCCTGCCCT GGGGAACCCC TGGCCCTGTG  
GGGACATGAA CTGTAAGTTG GTTCATGGG AGGGTGGAG GGACAGGGAG GCAGGGAGGA GAGGGACCCA  
CGGCGGGGGT GGGAGCAGAC CCCGCTGAGT CGCAGAGAGA GGGACCCGA GACAGGCAGC CGGGAGGAG  
AGCAGCTTCG GAGACAGGAG GCGGCGGAG AGATGGGCAG AGAGAGACAC AGACAGGAGC GGATGGAGGC  
AGCCAATCAG AGGCGCCGA GGAGGGACGG GCCAGACAG GCCCAGAGG AGCGAGACGC GAGACCGAGC  
AGGGGACGGG ACGCAGGGAC TGTTGCCGGG AGGGAGGTGA CCCCCATCGA CCCAGGCCCC AGGGAGCCCG CGGGGACCGG  
GAGACTCCCT GGGATTCCG CAGAGAGGCT CCGAGGGAA ACTGAGGCAG GGTCCGCGGA GAGCGGAGCA AGCCAGGGAG  
TAGCGACCCC AGCCGGGGGG AGGAGAGAGA CTGGGCGCCG GGGGAAAGCG GGGAGAGCCG GGCAGATGCG  
GCCGACGGAG GCGCGACAG ACCGACGGCT GCGGGGCCG GGGGGCGGGC TGGGGGTGTG CGAGGCGCGG  
GCGGCCGGGG AGCGCTGATT GGCTGGCGGG TGCCGGGTG GCGGGGGCG CCGGGGTGG CTGCGGGGAG CGAGTCCGG  
ACCCCCGCG CCCC GGCGCC CCCC GGCGCC GCTCTCCCG TCCCGCGCC CGGCCGGCC ATGGCTCTG  
CCCTCTCCG CCAGGTGCG TGCGGCCCG GCTTCTGCC CCAACCCGG GGGCTCTGG GAGGGCGTCT AAGGGTCTC  
CCGTGGGAGA GGTCCGTGTC TCCGGACTC GTCTCTGGG TTTTGGCTCC TTCCCTGCT CCCAGCCAGC TCGGGTCCC  
GCGGCCCGGG GAGGGGGCAG GTTCTGGCT GTGCTCCCC CACCATCCG GCCCGGGG CCAGATTCCG GGTCCGGG  
GCGGACGGGA GACGCCCGG CCGCTCTGC TCCGACGGG GGGCAGCCA GAGCCAGGGA GGGAGAGGGA AGCCCGCTG  
GCCCTGCGAC CTGCCCCGG GCGTTCACC CTGGACTTA AGACCTCAG CTCCATCTC CTAAGGCCG GGAGTCCAGG  
CCCCAGACCC TCCTCCCCA GACCCAGGAG TCCAGACCC AGGCCTCTCT CCTCAGACC TAGGAGTCCA GGCCCCAGC



CTCTCCTCCC TCAGACCCAG GAGGAGTCCA GACCCAGTT CCTCCTCCT CAGACCCGGG AGTCCAGCCC AGGCCCTCCT  
CTCTCAGACC CGGAGTCCAG CTTGAGCTCT CTGCTTATC CTGCCCCAG GTGTTTGGCG CTGGTCTCG .GTCGTGCTGA  
GCCTGTGGCC AGATACAGCT GTCGCCCTG GGCCACCACC TGGCCCCCT CGAGTTTCCC CAGACCCTCG GGCCGAGCTG  
GACAGCACCG TGCTCCTGAC CCGTCTCTC CTGGCGGACA CGCGGCAGCT GGCTGCACAG CTGGTAGGAG AGACTGGGCT  
GGGGCCAGCA CAGGAGTGAG AGGCAGAGAG GAACGGAGAG GAGTCTGCGG GCAGCCACTT GGAGGGGTTT TGGGCTCTCA  
GGTGGCAGAG TGAGGGAGGG GAAGAGTTGG GGGCTGGCG TGGGGGATGG AGGGAGCCCC GAGGCTGGGG  
AGGGGCCACC TCACAGCTTT TTTCCCTGCC AGAGGGACAA ATTCCAGCT GACGGGGACC ACAACCTGGA TTCCCTGCC  
ACCCTGGCCA TGAGTGCAGG GGCAGTGGGA GCTCTACAGG TAAGGGCAAG GGAGTGGGCT GGGGACAAGG TGGGAGGCAG  
GCAGTGAAGG GGGCGGGGAG GATGAGGGGC ACTGGTGGG TGTCTCTGA TGTCCCGCT CTATCCCCAG CTCCAGGTG  
TGCTGACAAG GCTGCGAGCG GACCTACTGT CTAACCTGCG GCACGTGCAG TGGCTGCGCC GGGCAGGTGG CTCTCCCTG  
AAGACCCTGG AGCCCGAGCT GGGCACCCTG CAGGCCCGAC TGGACCGGCT GCTGCGCCGG CTGCAGCTCC TGGTATGTCC  
TGGCCCCAAG ACCTGACACC CCAGACCCCC ACCCTGGCC CAAAATCCT GTGGCCTGAG TCCTTGAAGC CTGAGACCCC  
AGACCCGAGT GCAACAGCCC CGCTCTGAGA CCTGACACC CTAACAGCCC GCTCTGAGAC CTGACACCG TAACAGCCCC  
GCTCTGAGAC CTGACCCCTA ACAGTCTGC TCTGAGACCC TGACCCTGCA GTCCCAAGAT CTGTGGCCC TGAGACCCTG  
AGGCCCTAGA CCCCCAAATC CTGCCAGAA ACTTCAAAT CTCACCCAAG ACCCTGAGAC TCCATCATCC ATGACCTCAA  
AGTCCCAGA TCCCAGCCCC TAAGACCCAA GACCCATCC TGAAGCCAA AGCCTTGAGA ATTCAAATCC TCACCTCAAG  
ACTTGAGAC CTGGCCCCA TGACATTGAA AACCATGGAC CTGGCCAGGC GTGGTGGCTC ACGCTGTAA TCCCAGCACT  
TTGGGAGGCC GAGGCAAGTG GATCACTGA GGTGGGAGT TCAAGACCAG CCAGACCAAC ATGGTGAAC CCTGTCTCTA  
CTAAAAATAC AAAATTAGCC AGGCGTGGT GTGCATGCT GTAATCCAG CTAATTGGGA GGCTGAGGCA GGAGAATCGC  
TTGAACCTGG GAGGCGGAGG TTGAGTGAG CCGAGATCGC ACCATTACAC TCCAGCCTGG GCAACAAGAG CAAAACCTCC  
TCTCTCTCAA AAAAAAAAAA AAAAAAAAAA AAGAAGGAAA AGAAAACCAT GGACCTCCAG ACCCTGAGAC CCCAGGCCCC  
AGCCCTGAGA TCCTGACATC TTAAGATCC CAGGCCCTAA GATACAAGAC CTTGACCCAA AGCCAGCCTT GGGACCCTGG  
CTGTACAAAC CCAAGACCTC CAGGACCTAG ACCCGAGCC CTGAGGCCCT ATGTCTCACT CCAACATCG AAAACCTGA  
CACCTCAGAT CTGAGCCTG CGCTGTACG ACTCCAAGAC CCTCACTTC AAAGCCAGGC CCAAAGCCT GAGACCAGAA  
GACTTCAAAC CTGGTTCTT GGGCCTAACT CCAAAGACCC TGGATCTCAA ATTCAAAT CTAGCTCTGA GACTCCAGCC  
CTCACCCTAG AGTTCTGAA CTGAACCCA GAGACCCAT CTCTAAGACT TCAGCCTGA GATCCAGGGC CTGACCCTAG  
ACTCGAGCCC ACAGACCTCA GATACTGTCT GTAAACCCC AGCTCTGGT GGGAGCAGTG GCTCACTCT GTAAATCCAA  
GGCAGGGGAG GCCAAGGCAG AAGGACCTCT TGAGGCCATG AGTTGAGAC AGCCTGGGCA GCATAGCAAG ACTCTGTTT  
TTAATTATTA TTATTATTAT TATTTTGG AGACAGAGTC TCGCGCTCTG TTGCCAGGC TAGAGTGCAA TGGTGCCATT  
TCGGCTTGCT GGAACCTCG CCTCTGGG TCAAGCGATT CTCTGCTC AGCCTCTGA GTAGCTGGGA CTTAGGTGC  
ACACTGCCAC ACCCGATAA TTTTTTGT TTTAGTAGA CACAGGGTT CACCGTGTG CCCAGGCTGG TCACAACTC  
CTGAGCTCAG GCCATCCGCC CGCTCGGCC TCCAAAGCG CTGGGATAAC AGGCGTGACG CCGCGCTGG CTTCTTAATT  
GTTCTAACAG CAGCGACAAC AACAAAAACC CAGCTCTGAG ATTCCAGCCC CGGCGACTCT AACAGTCCA GGGCCGATCC  
CTCACCCTAG ACCGAGATGC CAGCCCTGAC TCCACAGACT TCACCCCAA CCCCACACT CAGCTCTGA AGCCGCTCT  
GACTCCAGCC TCCATTTTCG GAACCCACA GCCTGAAGAG CTCCCGGCT AAACACTTCA CCCCACGCG CACAGTCCCC  
CTGTGAATAT GCAGCCCCGA TTCAGCTGCA GCTCCACAGC ACCCTGCCC TGCACCCCG CTGCACCCC TACCTGTGAC  
TCACCTCTCT CCTCTCCCA CAGATGTCCC GCTGGCCCT GCCCCAGCA CCCCAGACC CGCCGCGCC CCCGCTGGC  
CCCCCTCT CAGCCTGGG GGGCATCAG GCGGCCACG CCATCCTGG GGGGCTGCAC CTGACACTTG ACTGGGCCGT  
GAGGGGACTG CTGCTGCTGA AGACTCGGCT GTGACCCGG GCCAAAGCC ACCACGTC TCCAAAGCC AGATCTTATT  
TATTTATTA TTTCAGTACT GGGGGCGAAA CAGCCAGGTG ATCCCCCGC CATTATCTCC CCCTAGTTAG AGACAGTCT  
TCCGTGAGGC CTGGGGGGCA TCTGTGCCT ATTTATACT ATTTATTTCA GGAGCAGGGG TGGGAGGCAG GTGGACTCT  
GGGTCCTCGA GGAGGAGGG ACTGGGTCC CGGATTCTG GGTCTCCAAG AAGTCTGTCC ACAGACTCT GCCCTGGCTC  
TTCCCATCT AGGCTGGG AGGAACATAT ATTATTTATT TAAGCAATTA CTTTTCATGT TGGGTGGG ACGGAGGGGA  
AAGGGAAGCC TGGGTTTTTG TACAAAAATG TGAGAAACCT TTGTGAGACA GAGAACAGGG AATTAATGT GTCATACATA  
TCCACTTGAG GCGATTGT CTGAGAGCTG GGGCTGGATG CTTGGGTAAC TGGGGCAGGG CAGGTGGAGG GGAGACCTCC  
ATTAGGTGG AGGTCCCAG TGGGCGGGG AGCGACTGG AGATGGGTG GTCAACCAGA CAGCTCTGTG GAGGAGGGT  
CTGAGCCTG CTGGGGGCC CGCACTGCAT AGGGCCGTT GTTTGTTTT TGAGATGGAG TCTCGCTCTG TTGCCTAGGC  
TGGAGTGCAG TGAGGCAATC TAAGGTCACT GCAACCTCCA CTTCCCGGT TCAAGCAATT CTCCTGCCTC AGCCTCCGA  
TTAGCTGGGA TCACAGGTGT GCACCACTAT GCCCAGCTAA TTATTTATT CTTTGTATT TTTAGTAGAG ACAGGGTTTC  
ACCATGTTGG CCAGGCTGGT TTCGAATCC TGACCTCAGG TGATCCTCT GCTCGGCCT CCAAAGTGC TGGGATTACA  
GGTGTGAGCC ACCACCTG ACCCATAGGT CTTCAATAAA TATTTAATGG AAGGTTCAC AAGTCAACCT GTGATCAACA  
GTACCCGTAT GGGACAAAGC TGCAAGGTCA AGATGGTTCA TTATGGCTGT GTTACCATA GCAAACCTGGA AACAATCTAG  
ATATCCAACA GTGAGGGTTA AGCAACATGG TGCATCTGTG GATAGAACGC CACCCAGCCG CCCGAGCAG GGAAGTGCAT  
TCAGGGAGGC TAAGGAGAGA GGCTTGCTT GGATATAGAA AGATATCCTG ACATTGGCCA GGCATGGTGG CTCACGCTG  
TAATCCTGGC ACTTTGGGAG GACGAAGCGA GTGGATCACT GAAGTCCAAG AGTTTGAGAC CGGCTGCGA GACATGGCAA  
AACCCTGTCT CAAAAAGAA AGAATGATGT CCTGACATGA AACAGCAGC TACAAAACCA CTGCATGCTG TGATCCCAAT  
TTGTGTTTT TCTTCTATA TATGGATTAA AACAAAAATC CTAAGGGGAA ATACGCCAAA ATGTTGACAA TGACTGTCTC  
CAGGTCAAAG GAGAGAGGTG GGATTGTGGG TGACTTTTAA TGTGTATGAT TGTCTGTATT TTACAGAATT TCTGCCATGA  
CTGTGTTTT TGCATGACAC ATTTTAAAAA TAATAACAC TATTTTATA ATAACAGAAT ATCAGCCTCC TCCTCTCAA

AAATAAGCCC TCAGGAGGGG ACAAAGTTGA CCGCTGATTG AGCCTGTACG GGCTGTGCAC-3' (FRAG. NO: ) (SEQ. ID NO:2523)

5'-GCTCAGGGCA CATGCTCCC CTCCCCAGGC CGCGGCCAG CTGACCCTCG GGGTCCCCC GGCAGCGGAC  
AGGGAAGGGT TAAAGGCCCC CGGCTCCCTG CCCCCTGCCC TGGGGAACCC CTGGCCCTGT GGGGACATGA ACTGTGTTTG  
CCGCTGGTGC CTGGTCTGTC TGAGCCTGTG GCCAGATACA GCTGTCCGCC CTGGGCCACC ACCTGGCCCC CCTCGAGTTT  
CCCCAGACCC TCGGGCCGAG CTGGACAGCA CCGTGCTCT GACCCGCTCT CTCCTGGCGG ACACGCGGCA GCTGGCTGCA  
CAGCTGAGGG ACAAATCCC AGCTGACGGG GACCACAACC TGGATTCCCT GCCACCCTG GCCATGAGTG CGGGGGCACT  
GGGAGCTCTA CAGCTCCCAG GTGTGCTGAC AAGGCTGCGA GCGGACCTAC TGTCTACCT GCCGCACGTG CAGTGGCTGC  
GCCGGGACAG TGGTCTTCC CTGAAGACCC TGGAGCCGA GCTGGGCACC CTGCAGGCC GACTGGACCG GCTGCTGCGC  
CGGCTGCAGC TCCTGATGTC CCGCTGGCC CTGCCCCAGC CACCCCGGA CCCGCCGGC CCCCCGTGG CCCCCCTC  
CTCAGCTGG GGGGCGATCA GGGCCGCCA CGCATCCTG GGGGGCTGC ACCTGACACT TGACTGGGC GTGAGGGGAC  
TGCTGTGCT GAAGACTCG CTGTGACCCG GGGCCAAAG CCACCACCGT CCTTCAAAG CCAGATCTTA TTTATTTATT  
TATTTCAGTA CTGGGGCGA AACAGCCAGG TGATCCCCC GCCATTATCT CCCCCTAGTT AGAGACAGTC CTCCGTGAG  
GCCTGGGGGA CATCTGTGCC TTATTATAC TTATTATTT CAGGAGCAGG GGTGGGAGGC AGGTGGACTC CTGGGTCCC  
GAGGAGGAGG GACTGGGGT CCCGATTCT TGGGTCTCA AGAAGTCTGT CCACAGACTT CTGCCCTGGC TCTTCCCAT  
CTAGGCCTGG GCAGGAACAT ATATTATTA TTAAAGCAAT TACTTTTCAT GTTGGGTGG GGACGGAGGG GAAAGGGAAG  
CCTGGGTTTT TGTACAAAA TGTGAGAAAC CTTGTGAGA CAGAGAACAG GGAATTAAT GTGTCATACA TATCC-3'  
(FRAG. NO: ) (SEQ. ID NO:2521)

5'-CAGTCCGGC ATCCTCTGTC TCAGAGTCTT GGTGTCTCTG TTCCTTCCC CTCGGGGTCT CCCTGGGTCT CCCAAGTCC  
CTCTGCTGT CTCTCCCCG CTCTCTGATC TCTGACTCCC AGAACCTCTC CCTGTGTCTC CAGGGCTGCC CCTGTATCC  
TCTTGTCTC TCTGGTGTGT CTCTCTGGCT GCCTCCATCT CTGGGATCT CCGTCTCCCT GTCTCTGTCT CAGTCTGTCC  
TTCACCTGT GTGTGTGTGT GTCTCTCTCT CTCTCTCTC TTCCCTTCCA CTCCTCTTC CTCTGCTCT CACCTCTCCA  
GGCCCCGTG TTGTCCCTCC GTCCGGCCTT TCTGTGCTT TCCGTCTCC TGCCTCCCA TCTCTCTCTG CTAGTCTGT  
CCAGCCGAC CCCCACCCAC AGTCGGGCCC CAGCGCTTGA GCCTGAGTGT CTGCTCCGGC CCGTGGAGGT GGAGGGAGGG  
GACGCCAATG ACCTACCAG CCCCTCTCG ACCACCCCC CTTTCCCTT TCAACTTTT CCAACTTTT CTCCGTGCC  
CTCTCCGAG CGCGGGCGG TGAGCCCTGC AAGGCAGCG CTCCGTCTGA ATGAAAAAGG CAGGCAGGGA GGGTGAGTCA  
GGATGTGTA GGCGGGCCCT CCCCTGCCG CTGCCCCCG CCCGCCCGC CCAGGCCCC TATATAACCC CCCAGCGTC  
CACATCTCT CACTGCCG GGCCTGTG CTGAGGCGAC ATGCTCCCC TCCCAGCGC CGGCCCCAG TGACCTCGG  
GGTCCCCG CAGCGGACA GGAAGGGTT AAAGGCCCC GTCTCCCTGC CCCCTGCCCT GGGGAACCC TGGCCTGTG  
GGGACATGAA CTGTAAGTTG GTTCATGGG AGGGTGGAG GGACAGGAG GCAGGGAGGA GAGGGACCA  
CGGCGGGGT GGGAGCAGAC CCCGCTGAGT CGCACAGAGA GGGACCGGA GACAGGCAGC CGGGAGGAG  
AGCAGTTCG GAGACAGGAG GCGGCGGAG AGATGGGAG AGAGAGACAC AGACAGGAGC GGATGGAGGC  
AGCCAATCAG AGGCGCCGA GGAGGGACGG GCCAGACAG GCCCGAGAG AGCGAGACGC GAGACCGAGC  
AGGGCAGGG ACAGAGGAG TGGTGCCGG AGGAGGTGA CCCCATCGA CCCAGGCCC AGGGAGCCG CGGGACCGG  
GAGACTCCCT GGGATTCCG CAGAGAGGCT CCGGAGGAA ACTGAGGCAG GGTCCGCGG GAGCGGAGCA AGCCAGGAG  
TAGCGACCC AGCCGGGGG AGGAGAGAGA CTGGGCGCG GGGGAAAGC GGGAGAGCC GGCAGATGC  
GCCGACGAG GCGCGACAG ACCGACGGT GCGGGCCCC GGGGGCGGC TGGGGTGTG CGAGGCGCG  
GCGGCCGGG AGCCTGATT GGTGGCGGG TGGCGGGTG GCGGGGCGG CCGGGGTGG CTGCGGGGAG CGAGTCCG  
ACCCCGCGC CCGGGCGCC CCGCGCGCC CCGCGCGCA GCTCTCCCG TCCGGCGC CGGCCGGGC ATGGCTCTG  
CCCTCTCCG CCAGTGCGC TCGGCCCCG GCTTCTGCC CCCACCGG GGGCTCTGG GAGGCGCTT AAGGGTCTC  
CCCTGGGAGA GGTCCGTGTC TCCGGACTC GCTCTGGG TTTTGGCTC TCCCTGCT TCCAGCAGC TCGGGCTCC  
GCGGCCGGG GAGGGGCGG GTTCTGGCT GTGCTCCCC CACCATCCG GCCCCGGGC CCAGATTCCG GCGTCCGGG  
GCGGACGGA GACGCCGGG CCGCTCTG TCCGACGGG GGGGAGCCA GAGCCAGGA GGGAGAGGA AGCCCGCTG  
GCCCTGCGAC CTGCCCCGG GCGTTCACC CTGGGACTA AGACTCCAG CTCCATCCT CTAAGGCCG GGAGTCCAG  
CCCCAGACC TCCTCCCGA GACCCAGGAG TCCAGACCC AGGCCTTCT CCTCAGACC TAGGAGTCCA GGCCCCAGC  
CTCTCTCC TCAGACCCAG GAGGAGTCCA GACCCCTCT CCTCTCCCT CAGACCCGG AGTCCAGCC AGGCCCTCT  
CTCTCAGAC CCGAGTCCAG CTTGAGCTCT CTTGCTTAT CTGCCCCAG GTGTTTGGC CTGCTCTG GTCGTCTGA  
GCCTGTGGC AGATACAGT GTCGCCCCG GGCCACCACC TGGCCCCCT CGAGTTTCC CAGACCCTG GGCCGAGCTG  
GACAGCACG TGCTCTGAC CCGCTCTCT CTGGCGGACA CGCGGAGCT GGCTGCACAG CTGGTAGGAG AGACTGGCT  
GGGGCCAGCA CAGGAGTGA AGGCAGAGAG GAACGGAGAG GAGTCTGCG GCAGCCACT GGAGGGGTT TGGGCTCTA  
GGTGGCAGAG TGAGGGAGG GAAGAGTTG GGGCCTGGC TGGGGATG AGGAGCCCC GAGGCTGGG  
AGGGGCCAC TCACAGCTT TTTCCCTGCC AGAGGGACA ATTCCCAGT GACGGGGACC ACAACCTGGA TTCCCTGCCC  
ACCCTGGCCA TGAGTGACG GGCAGTGGG GCTTACAGG TAAGGGCAAG GGAGTGGGT GGGACAAGG TGGGAGGAG  
GCAGTGAAG GGGCGGGGAG GATGAGGGG ACTGCTCGG GTTCTCTGA TGTCCGGCT CTATCCCCAG CTCCAGGTG  
TGCTGACAAG GCTGCGAGC GACCTACTGT CTAACCTGCG GCACGTGAG TGGTGGCGC GGGCAGGTG CTCTCCCTG  
AAGACCTGG AGCCGAGCT GGGCACCTG CAGGCCGAG TGGACCGCT GCTGCGCGG CTGACGTCC TGGTATGTC  
TGGCCCAAG ACCTGACACC CCAGACCCC ACCCTGGCC CCAAATCCT GTGGCTGAG TCCTTGAAGC CTGAGACCC  
AGACCCGAGT GCAACAGCCC CGCTCTGAGA CCTGACACC CTAACAGCCC GCTCTGAGC CTGACACC TAACAGCCC  
GCTCTGAGC CTTGACCTA ACAGTCTGC TCTGAGACC TGACCTGCA GTCCCAAGAT CTTGTGGCC TGAGACCTG  
AGGCCCTAGA CCCCCAACT CTGCCAGAA ATTCAAAAT CTACCCAAAG ACCCTGAGAC TCAATCATC ATGACCTCA  
AGTCCCCAGA TCCAGCCCC TAAGACCAA GACCCATCC TGAAGCCAA AGCCTTGA ATTCAATCC TCACCTCAAG  
ACTTGGAGC CTGGCCCCA TGACATTGAA AACCATGGC CTGGCCAGG GTGGTGGCTC ACGCTGTAA TCCAGCACT  
TTGGGAGGC GAGGCAAGT GATCACTGA GGTGGGAGT TCAAGACCAG CCAGACCAAC ATGGTGAAAC CTGTCTCTA  
CTAAATATC AAAATTAGC AGGCGTGGT GTGCATGCT GTAATCCAG CTACTGGGA GGCTGAGGA GGAGAATCG  
TTGAACCTG GAGGCGGAG TTGCAGTGA CCGAGATCG ACCATTAC TCCAGCTGG GCAACAAGAG CAAACTCCC  
TCTCTCTCA AAAAAA AAAAAGAAA AAGAGGAAA AGAAACCAT GGACCTCAG ACCCTGAGC CCAAGCTCC  
AGCCCTGAGA TCTGACATC TTAAGATCC CAGGCCATA GATACAAGAC CTTGACCAA AGCCAGCCT GGGACCTG  
CTGTACAAAC CCAAGACCTC CAGGACCTAG ACCCGAGCC CTGAGGCCCT ATGTCTCACT CCAACATCG AAAACCTGA

CACCTCAGAT CCTGAGCCTG CGCCTGTACG ACTCCAAGAC CCTCACTTCC AAAGCCAGGC CCAAAGCCCT GAGACCAGAA  
GACTTCAAAC CCTGGTTCTT GGGCCTAACT CCAAAGACCC TGGATCTCAA ATTCCAACCT CTAGCTCTGA GACTCCAGCC  
CTCACCCATG AGTTCTCTGAA CTGGAACCCA GAGACCCCAT CTCTAAGACT TCAGCCTTGA GATCCAGGGC CTGACCCTAG  
ACTCGAGCCC ACAGACCTCA GATACTGTCT GTAAAAACCC AGCTCTGGTG GGGAGCAGTG GCTCACTCTT GTAATCCCAA  
GGCAGGGGAG GCCAAGGCAG AAGGACCTCT TGAGGCCATG AGTTTGAGAG AGCCTGGGCA GCATAGCAAG ACTCTGTTTC  
TTAATTATTA TTATTATTAT TATTTTGTG AGACAGAGT TCGCGCTCTG TTGCCAGGC TAGAGTGCAA TGGTGCCATT  
TCGGCTTGCT GGAACCTCCG CCTCTGGGC TCAAGCGATT CTCCTGCCCTC AGCCTCCTGA GTAGCTGGGA CTTCAGGTGC  
ACACTGCCAC ACCCGGATAA TTTTTTGTG TTTAGTAGA CACAGGGTTT CACCGTGTG CCCAGGCTGG TCACAACTC  
CTGAGCTCAG GCCATCCGCC CGCCTCGGCC TCCCAAAGCG CTGGGATAAC AGGCGTGACG CCGCGCCTGG CTCTTAATT  
GTTCTAACAG CAGCGACAAC AACAAAAACC CAGCTCTGAG ATTCCAGCCC CGGCGACTCT AACAGTCCCA GGCCCGATCC  
CTCACCTAGA ACCGAGATGC CAGCCCTGAC TCCACAGACT TCACCCCAA CCCCCACCT CAGCTCTGGA AGCCCGTCT  
GACTCCAGCC TCCGTTTTCG GAACCCACA GCTCAAGAG GCTCCGGCCT AAACACTTCA CCCCACGGC CACAGTCCCC  
CTGTGAATAT GCAGCCCCGA TTCAGCTGCA GCTCCACAGC ATCCCGGCTC TGCACCCCG CTGCACCCCT TACCTGTGAC  
TCACCTCTCT CCTCTCCCA CAGATGTCCC GCCTGGCCT GCCCCAGCCA CCCCCGACC CGCCGGCGCC CCCGTGGCG  
CCCCCTCT CAGCCTGGG GGGCATCAG GCGCCACG CCATCCTGGG GGGGCTGCAC CTGACACTTG ACTGGGCGGT  
GAGGGGACTG CTGCTGCTGA AGACTCGGCT GTGACCCGGG GCCCAAAGCC ACCACCGTCC TTCCAAAGCC AGATCTTATT  
TATTTATTTA TTTCACTACT GGGGGCGAAA CAGCCAGGTG ATCCCCCGC CATTATCTCC CCTAGTTAG AGACAGTCT  
TCCGTAGGC CTGGGGGGA TCTGTGCTT ATTTACTT ATTTATTCA GGAGCAGGGG TGGGAGGCA GTGGACTCT  
GGGTCCCGA GGAGGAGGGG ACTGGGGTCC CGGATTCTTG GGTCTCCAAG AAGTCTGTCC ACAGACTTCT GCCCTGGCTC  
TTCCCATCT AGGCCTGGG AGGAACATAT ATTATTTATT TAAGCAATTA CTTTTCATGT TGGGGTGGG ACGGAGGGGA  
AAGGGAAGCC TGGGTTTTT TACAAAAATG TGAGAAACCT TTGTGAGACA GAGAACAGGG AATTAAATGT GTCATACATA  
TCCACTTGAG GGCGATTGT CTGAGAGCTG GGGCTGGATG CTGGGTAAC TGGGGCAGGG CAGGTGGAGG GGAGACCTCC  
ATTCAGGTGG AGGTCCCGAG TGGGCGGGG AGCGACTGGG AGATGGGTG GTCACCCAGA CAGCTCTGTG GAGGCAGGGT  
CTGAGCTTG CTTGGGGCCC CGCACTGCAT AGGGCGGTTT GTTTGTTTT TGAGATGGAG TCTCGCTCTG TTGCTAGGC  
TGGAGTGCAG TAGGCAATC TAAGGTCACT GCAACCTCCA CTTCCCGGT TCAAGCAATT CTCTGCTC AGCCTCCGA  
TTAGCTGGA TCACAGGTGT GCACCACCAT GCCAGCTAA TTATTTATT CTTTGTATT TTAGTAGAG ACAGGGTTTC  
ACCATGTTG CAGGCTGGT TTCGAATCC TGACCTCAGG TGATCCTCT GCCTCGGCT CCAAAGTGC TGGGATTACA  
GGTGTAGCC ACCACACCTG ACCCATAGGT CTCAATAAA TATTAATGG AAGGTCCAC AAGTCAACCT GTGATCAACA  
GTACCGTAT GGGACAAAGC TGCAAGGTCA AGATGGTTCA TTATGGCTGT GTTACCATA GCAAAGTGA AACATCTAG  
ATATCAACA TGAGGGTTA AGCAACATGG TGCATCTGTG GATAGAACG CACCAGCCG CCCGAGGAG GGAAGTGTAT  
TCAGGAGGC TAGGAGAGA GGCTGTCTG GGATATAGAA AGATATCTG ACATTGGCCA GGCATGGTG CTACAGCCTG  
TAATCCTGGC ACTTTGGGAG GACGAAGCGA GTGGATCACT GAAGTCCAAG AGTTTGAGAG CGGCTGCGA CACATGGCAA  
AACCTGTCT CAAAAAAGAA AGAATGATGT CTGACATGA AACAGCAGGC TACAAAACCA CTGCATGCTG TGATCCCAAT  
TTTGTGTTT TCTTCTATA TATGGATTAA AACAAAAATC TAAAGGGAA ATACGCCAAA ATGTTGACAA TGACTGTCTC  
CAGGTCAAAG GAGAGAGGTG GGATTGTGG TGACTTTTAA TGTGTATGAT TGTCTGTATT TTACAGAATT TCTGCCATGA  
CTGTGATT TGCATGACAC ATTTAAAAA TAATAAACAC TATTTTATA ATAACAGAAT ATCAGCCTCC TCCTCTCAA  
AAATAAGCCC TCAGGAGGGG ACAAAGTTGA CCGTGATTG AGCCTGTGAG GGCTGTGCAC-3' (FRAG. NO: ) (SEQ.  
ID NO: 2522)

#### Human GM-CSF Nucleic Acid and Antisense Oligonucleotide Fragments

5'-CTTGBGCBGG BBGCTCTGGG GCBGGGBGCT GGCBBGGCCC BGGGGGGTGG CTTCTGCBG TGTCCBGBGT GCBCTGTGCC  
BCBGBGCBG CTGCBGGGCC BTBGGCTTCB TGGGGCTCTG GGTGGCBGGT CCBGCCBTGG GTCTGGGTGG GGCTGGGCTG  
CBGGTCCGG GCGGTCCBGGCBTGGGTCTG GGGGCTGGG CTGCBGGCTC CGGGCGGGCG GGTGCGGGCT GCTGTCTGGG  
GGTGGCCCC GAGGCCCTGC GGTCCBGGCB TGGGTCTGGG GGCTGGGCTG CBGGTCCGG GCGGGCGGGT GCGGGCTGCG  
TGCTGGGGG TGCCCGCAG GCCCTGC-3' (FRAG. NO:1847) (SEQ. ID NO: 1858)  
5'-GBGCBGG BBG-3' (FRAG. NO:1848) (SEQ. ID NO: 1859)  
5'-GCCBGBGCBGCBG-3' (FRAG. NO:1849) (SEQ. ID NO: 1860)  
5'-GGG TGC GGG C-3' (FRAG. NO:1850) (SEQ. ID NO: 1861)  
5'-GGT CCB GCC BTG GGT CTG GG-3' (FRAG. NO:1300)(SEQ. ID NO:1310)  
5'-GGC TGG GCT GCB GGC TCC GG-3' (FRAG. NO:1301)(SEQ. ID NO:1311)  
5'-GCG GGC GGG GGG CTG CGT GCT GGG-3' (FRAG. NO:1302)(SEQ. ID NO:1312)  
5'-GGC TGC CCC GCA GGC CCT GC-3' (FRAG. NO:1303)(SEQ. ID NO:1313)  
5'-CTTGBGCBGG BBGCTCTGGG GCBGGGBGCT GGCBBGGCCC BGGGGGGTGG CTTCTGCBG TGTCCBGBGT GCBCTGTGCC  
BCBGBGCBG CTGCBGGGCC BTBGGCTTCB TGGGGCTCTG GGTGGCBGGT CCBGCCBTGG GTCTGGGTGG GGCTGGGCTG  
CBGGTCCGG GC-3' (FRAG. NO:1851) (SEQ. ID NO: 1862)

#### Human Tumor Necrosis Factor " Antisense Oligonucleotide Fragments

5'-GCBCCGCTG GBGCCCTGGG GCCCCCTGT CTTCTGGGG BCGCCTCTC CGGCCBGGCTC CCBGTCCCGG BTBGTGCTT  
CBGTGCTCBT GGTGCTCTT CCBGGGGGBG BGGGGGCTGG TCCTCTGCTG TCCTTGCTGG TGCTCBTGGT GTCTTTCCG  
CCCTGGGGCC CCCCTGTCTT CTGGGGGCT CTCCCTCTG GGGGCGGTCT CTCTCCCTCT CTGCGTCTC TCTTTCTC  
TCTCTCTCT CCCCTTCCC GCTCTTCTG TCTCGGTGTC TGGTTTCTC TCTCCGCTGG CTGCGTCTC GGCTGCGCT  
CTTGGCCTGT GCTGTCTCTC CTCCGGTTC TGCTCTCT TGTGTGCCC CCTCTGGG TCTCCCTCTG GGTGGTGGT  
TTGTTGCTG GGTGGGCTC CGTGTCTCCB GTGCTCBTGG TGTCCGCTG GGBGCGTCT GCTGGGCTG GTCTGTGCTG  
CTTGCTGGT CTBGTGGTGT CTTTCCGCC CTGGGGCCCC CTTGTCTCT TGGGGCTCT TCCCTCTGGG GGCGTCTC  
TCTCCCTCTC TGCGTCTCT CTCTTCTCT CTCTCTCTC CCCTTCCCG CTCTTCTGT CTGCGTCTC GGTCTTCTCT  
CTCCGCTGGC TGCTGTCTG GCCTGCGCTC TTGGCCTGTG CTGTTCTCC TCCGTTCTC GTCTCTCTG TCTGTGCCCC  
CCTCTGGGT CTCCCTCTGG CGTGGTGGT TTGTTGCTG GGCTGGGCTC CGTGTCTCB GTGCTCBTGG TGTCCGCTG  
GGBGCGTCT GCTGGC-3' (FRAG. NO:1852) (SEQ. ID NO:1863)  
5'-GGGGCCCCC-3' (FRAG. NO:1853) (SEQ. ID NO:1864)

5'-GGG GGC CG TCT-3' (FRAG. NO:1854) (SEQ. ID NO:1865)

5'-CCBGGGGGBGB GBGGGGCTGG-3' (FRAG. NO:1855) (SEQ. ID NO:1866)

5'-

GCBCCGCCTGGBGCCCTGGGGCCCCCTGTCTTCTTGGGGBGCGCCTCCTCGGCCBGTCCBCGTCCCGGBTCBTGCTTTCBGTGC  
TCBTGGTGTCTTTCCBGGGGGBGBGGG-3' (FRAG. NO:1304) (SEQ. ID NO:1314)

5'-GCT GGT CCT CTG CTG TCC TTG CTG GTG CTC BTG GTG TCC TTT CC GCC CTG GGG CCC CCC TGT CTT CTT GGG G  
CCT CTT CCC TCT GGG GGC CG TCT CTC TCC TCT TGC GTC TCT C TCT TTC TCT CTC TCT CTT CCC C TTT CCC GCT  
CTT TCT GTC TC GGT GTC TGG TTT TCT CTC TCC GCT GGC TGC CTG TCT GGC CTG CGC TCT T GGC CTG TGC TGT TCC  
TCC TCC GGT TCC TGT CCT CTC TGT CTG TC GCC CCC TCT GGG GTC TCC CTC TGG C GTG GTG GTC TTG TTG CTT GGG  
CTG GGC TCC GTG TCT C CBG TGC TCB TGG TGT CC-3' (FRAG. NO:1305) (SEQ. ID NO:1315)

5'-GCT GBG GGB GCG TCT GCT GGC GCT GGT CCT CTG CTG TCC TTG CTG GTG CTC BTG GTG TCC TTT CC GCC CTG  
GGG CCC CCC TGT CTT CTT GGG G CCT CTT CCC TCT GGG GGC CG TCT CTC TCC CTC TCT TGC GTC TCT C TCT TTC  
TCT CTC TCT CTT CCC C TTT CCC GCT CTT TCT GTC TC GGT GTC TGG TTT TCT CTC TCC GCT GGC TGC CTG TCT GGC  
CTG CGC TCT T GGC CTG TGC TGT TCC TCC TCC GGT TCC TGT CCT CTC TGT CTG TC GCC CCC TCT GGG GTC TCC CTC  
TGG C GTG GTG GTC TTG TTG CTT GGG CTG GGC TCC GTG TCT C CBG TGC TCB TGG TGT CC GCT GBG GGB GCG TCT  
GCT GGC-3'

(FRAG. NO:1306) (SEQ. ID NO:1316)

5'-GCT GGT CCT CTG CTG TCC TTG CTG-3' (FRAG. NO:1655) (SEQ. ID NO:1665)

5'-GTG CTC BTG TCC TTT CC-3' (FRAG. NO:1656) (SEQ. ID NO:1666)

5'-GCC CTG GGG CCC CCC TGT CTT CTT GGG G-3' (FRAG. NO:1657) (SEQ. ID NO:1667)

5'-CCT CTT CCC TCT GGG GGC CG-3' (FRAG. NO:1658) (SEQ. ID NO:1668)

5'-TCT CTC TCC CTC TCT TGC GTC TCT C-3' (FRAG. NO:1659) (SEQ. ID NO:1669)

5'-TCT TTC TCT CTC TCT CTT CCC C-3' (FRAG. NO:1660) (SEQ. ID NO:1670)

5'-TTT CCC GCT CTT TCT GTC TC-3' (FRAG. NO:1661) (SEQ. ID NO:1671)

5'-GGT GTC TGG TTT TCT CTC TCC-3' (FRAG. NO:1662) (SEQ. ID NO:1672)

5'-GCT GGC TGC TCT GGC CTG CGC TCT T-3' (FRAG. NO:1663) (SEQ. ID NO:1673)

5'-GGC CTG TGC TGT TCC TCC-3' (FRAG. NO:1664) (SEQ. ID NO:1673)

5'-TCC GGT TCC TGT CCT CTC TGT CTG TC-3' (FRAG. NO:1665) (SEQ. ID NO:1675)

5'-GCC CCC TCT GGG GTC TCC CTC TGG C-3' (FRAG. NO:1666) (SEQ. ID NO:1676)

5'-GTG GTG GTC TTG TTG CTT-3' (FRAG. NO:1667) (SEQ. ID NO:1677)

5'-GGG CTG GGC TCC GTG TCT C-3' (FRAG. NO:1668) (SEQ. ID NO:1678)

5'-CBG TGC TCB TGG TGT CC-3' (FRAG. NO:1669) (SEQ. ID NO:1679)

5'-GCT GBG GGB GCG TCT GCT GGC-3' (FRAG. NO:1670) (SEQ. ID NO:1680)

#### Human Leukotriene C4 Synthase Nucleic Acids and Antisense Oligonucleotide Fragments

5'-CTCGGTBGB CCGCTCGBB TCGGGTGGGC CGGTGGTGBG CGGCGGCBGB CGCGGBBGGC CCTGCGCGCC  
GBGBTCBCTG CBGGGBBGBB TBGGCTTGC BCBGBBCTCC CBGGBGGGTG BCBGCBGCCB GTBGBGCTBC CTCGTCTTC  
BTGGTBCCGT CGGTGTGGTG GCBGCGGCTG TGTGTGBBGG CBGCGTGGGC CCCGCTGCT GCTCCTCGTG CCGCCTCGTC  
CTTCA TGG TA CCGTCGGTGT GGTGGCCTCG GGTGGGCGCG TGGTGGGGCG CGCGCGCTCG CGTGGCTCCG GCTCTTCTT  
CCCGGCTCCGT CGGCCCGGG GCCTTGGTCT CCCTCGTCT TCBTGGTBCC G-3' (FRAG. NO:1856) (SEQ ID NO: 1867)

5'-GCB GCBGGBC-3' (FRAG. NO:1857) (SEQ ID NO: 1868)

5'-CCCGGCTCCG-3' (FRAG. NO:1858) (SEQ ID NO: 1869)

5'-CGGCCCGGG GCC-3' (FRAG. NO:1859) (SEQ ID NO: 1870)

5'-CB CGCGG-3' (FRAG. NO:1860) (SEQ ID NO: 1871)

5'-GCC CCG TCT GCT GCT CCT CGT GCC G-3' (FRAG. NO:1307) (SEQ. ID NO:1317)

5'-CCT CGT CCT TCA TGG TAC CGT CGG TGT GGT GGC-3' (FRAG. NO:1308) (SEQ. ID NO:1318)

5'-CTC GGG TGG GCA GGT GGT G-3' (FRAG. NO:1309) (SEQ. ID NO:1319)

5'-GGG CGC GCG CGC TCG CGT-3' (FRAG. NO:1310) (SEQ. ID NO:1320)

5'-GGC TCC GGC TCT TCT TTC CCG GCT CCG TCG GCC CGG GGG CCT TGG TCT C-3' (FRAG. NO:1311) (SEQ. ID NO:1321)

5'-CCT CGT CCT TCB TGG TBC CG-3' (FRAG. NO:1312) (SEQ. ID NO:1322)

5'-CTCGGTBGB CCGCTCGBB TCGGGTGGGC CGGTGGTGBG CGGCGGCBGB CGCGGBBGGC CCTGCGCGCC  
GBGBTCBCTG CBGGGBBGBB TBGGCTTGC BCBGBBCTCC CBGGBGGGTG BCBGCBGCCB GTBGBGCTBC CTCGTCTTC  
BTGGTBCCGT CGGTGTGGTG GCBGCGGCTG TGTGTGBBGG CBGCTGG-3' (FRAG. NO:1861) (SEQ ID NO: 1872)

#### Human Endothelin-1 Nucleic Acids and Antisense Oligonucleotide Fragments

5'-BCCGGCGGBG CCGCCBGGGT GGBCTGGGBG TGGGTTTCTC CCCGCCGTTT TCBCCCBCCG CGCTGBGCTC BGCCTTBBG  
BCTGCTGTTT CTGGBGCTCC TTGGCBGGC BCBBCBGBB GBGBBBBBBT CBTGBGCBBB TBTCCBTTC TGBBBBBBBG  
GGBTCBBBB CCTCCGTTT CCCGTTGCC TGGCGCGCG TCGGGTTTCT CCCCCCGCC TTCTCCGGTC  
TGTTGCCTTT GTGGGCTTCT GTCTTTTGT GCTGTTCTT TCCTGCTTG CGTCTTTTCC TTCTTTGTG CTCGGTTGTG  
GGTCCGCTGG TCCTTTGCC TGTGTGTTT TGCTGCCCGT TCGCTGGCG CGCGCTGCG GTTCTCGTG GGTTCCTCC  
CGCGTTTCT CGGTCTGTT CCTTTGTGGG CTCTGTGTT TTTGGCTGT TCCTTTCTG CTGGCGTCT TTCTTTCT  
TTGTGCTCG TTGTGGGTCC GCTGGTCTT TGCCCTGTGT GTTCTGCTG-3' (FRAG. NO:1862) (SEQ. ID NO:1873)

5'-CCGGCGGBG CCGCCBGGGT GGBCT-3' (FRAG. NO:1863) (SEQ. ID NO:1874)

5'-CCGCCBGGG-3' (FRAG. NO:1864) (SEQ. ID NO:1875)

5'-GGCGCGCGC-3' (FRAG. NO:1865) (SEQ. ID NO:1876)

5'-GTGGGTCCGC-3' (FRAG. NO:1866) (SEQ. ID NO:1877)

5'-CCCGTTCCGCTGGCGC-3' (FRAG. NO:1313) (SEQ. ID NO:1323)

5'-GCGCTGCGGGTCTCTC-3' (FRAG. NO:1314) (SEQ. ID NO:1324)

5'-GTGGGTTTCTCCCGCGTTCTC-3' (FRAG. NO:1315) (SEQ. ID NO:1325)

5'-CGGTCTGTTGCTTTGTGGG-3' (FRAG. NO:1316) (SEQ. ID NO:1326)

5'-CTTCTGTCTTTTGGCT-3' (FRAG. NO:1317)(SEQ. ID NO:1327)  
5'-GTTCTTTCTGCTTGGC-3' (FRAG. NO:1318)(SEQ. ID NO:1328)  
5'-GTCCTTTCTTCTT-3' (FRAG. NO:1319)(SEQ. ID NO:1329)  
5'-TGTGCTCGGTTGTGGGC-3' (FRAG. NO:1320)(SEQ. ID NO:1330)  
5'-CGCTGGTCCTTTGCC-3' (FRAG. NO:1321)(SEQ. ID NO:1331)  
5'-CTGTGTGTTCTGCTG-3' (FRAG. NO:1322)(SEQ. ID NO:1332)  
5'-CCCCTTCGCTGGCGC-3' (FRAG. NO:1323)(SEQ. ID NO:1333)  
5'-GCGCTCGGGTTCCTC-3' (FRAG. NO:1324)(SEQ. ID NO:1334)  
5'-GTGGGTTTCTCCCGCCGTTCTC-3' (FRAG. NO:1325)(SEQ. ID NO:1335)  
5'-CGGTCTGTGCTTTGTGGG-3' (FRAG. NO:1326)(SEQ. ID NO:1336)  
5'-CTTCTGTCTTTTGGCT-3' (FRAG. NO:1327)(SEQ. ID NO:1337)  
5'-GTTCTTTCTGCTTGGC-3' (FRAG. NO:1328)(SEQ. ID NO:1338)  
5'-GTCCTTTCTTCTT-3' (FRAG. NO:1329)(SEQ. ID NO:1339)  
5'-TGTGCTCGGTTGTGGGC-3' (FRAG. NO:1330)(SEQ. ID NO:1340)  
5'-CGCTGGTCCTTTGCC-3' (FRAG. NO:1331)(SEQ. ID NO:1341)  
5'-CTGTGTGTTCTGCTG-3' (FRAG. NO:1332)(SEQ. ID NO:1342)

**Endothelin Receptor ET-B Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-GCCCTGTCGG GCGGGAAGCC TCTCTCTCT CCCAGATC CGCGACAGGC CGCAGGCAAG AACCAGCGCA ACCAGGGCGC  
GTCCGCACAG ACTTGGAGGC GGCTGCATGC TGCTACCTGC TCCAGAAGCG TCCGGTGGCC GCCGCGCC CTGTGGGGCG  
GGBBGCTCT CTCCTCTCCC CBGTCGCG BCBGGCCGB GGBBGBBCC BCGCBBCB GGGCGCGTCC GCBGBBCTT  
GGBGGCGGCT GCBTGTCT BCCTGCTCGGGCG GGBBGCCTCCG GTGGCCCGCG CGCGTCCGGT GCGCGCCGCG  
CCTCTCTCT CTCCTCGTGG CCTGTGCGG CGGGTCTGC CGTCTGTCT CTTTTCTTT TGCTGTCTTG TCTCCCGTC  
TCTGCTTT-3' (FRAG. NO: 1867) (SEQ. ID NO: 1878)  
5'-CGGGCG GGBBGC-3' (FRAG. NO: 1868) (SEQ. ID NO: 1879)  
5'-CGGGCGG-3' (FRAG. NO: 1869) (SEQ. ID NO: 1880)  
5'-CCGCBGBBC-3' (FRAG. NO: 1870) (SEQ. ID NO: 1881)  
5'-GCGTCCGGTGGCCGCCG-3' (FRAG. NO:1333)(SEQ. ID NO:1343)  
5'-GCCTCTCTCTCTCCC-3' (FRAG. NO:1334)(SEQ. ID NO:1344)  
5'-GTGGCCCTGTGCGGCGG-3' (FRAG. NO:1335)(SEQ. ID NO:1345)  
5'-TCCTGCCGTCCTGTCTCCTT-3' (FRAG. NO:1336)(SEQ. ID NO:1346)  
5'-TCTTTGTGTCTTGT-3' (FRAG. NO:1337)(SEQ. ID NO:1347)  
5'-CTTCCGTCCTGCTTT-3' (FRAG. NO:1338)(SEQ. ID NO:1348)  
5'-GCCCTGTCGG GCGGGAAGCC TCTCTCTCT CCCAGATC CGCGACAGGC CGCAGGCAAG AACCAGCGCA ACCAGGGCGC  
GTCCGCACAG ACTTGGAGGC GGCTGCATGC TGCTACCTGC TCCAGAAGCG TCCGGTGGCC GCCGC-3' (FRAG. NO: 1871)  
(SEQ. ID NO: 1882)  
5'-GCCCTGTCGG GCGGGBBGC TCTCTCTCT CCCBGBTCC GCGBCBGGCC GCBGGCBGB BCCBGCGB BCCBGGGCGC  
GTCCGCBGB BCTTGBBGGC GGCTGCTGC TGCTBCCTGC TCCBGBBGC TCCGGTGGCC GCCGC-3' (FRAG. NO: 1872)  
(SEQ. ID NO: 1883)

**Endothelin ETA Receptor Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-GTCTGTCTC CCCGTCTCT CCCACTGCTT CTCCGGGGG CTCCCGCGC TCGGGTGGC CGGTGTCCCG GGCTCCGGCG  
CGGCGGGCG TCCGGTGGC GGTGGTGGC GCGGGTGC GGTCCGCG GCGGCTGGG CCTTGTGCT GCTTTTGTCT  
TGTTCCGTT TGGTGTCT GGTCTGTGT GTGGTGTGT TGTCTCTCT TGGGTGTGG CCTTGGGTT TTGGTGTGG  
GCCCTTGGG GCTTGGCT CTGGCTGCT TGCTCTCCC GTCTCTCCC ACTGCTCT CCCGGGGCT TCCCGGCTT  
CGGGTGGCG GTGTCCGGG CTCCGGCGG GCGGGGCTT CGGCTGCGG TGGTGGCG GGGCTGCCG GTCCGCGCG  
CGCTGGCC CTGTGCTGCT TTTTGTCT TTCCGTTCT GCTGCTCCG TCTGTGTTGT GGTGTTTGT TTTCTCTG  
GGTGTGGCC TTGCGTTT GGCTGTGGC CTGTGGGC CTGGCTCT GGCTCCAT CCATGATT GCTTAGATT  
GTGCTGTAT TCTCAGGATT ATCACTGATT ACATACCAA CAGTGCCAG CAAAAGGAT GCCGTGAGG AAGGGTTT  
CATCTGAGG CAAATTGAG GACBTCCB BTGTTGCTT BGTGTTGCT TGTCTCTC BGGTBTCTB CTGTTTBCB  
BTCCBCCB TGCCBCCB BBGGTGGC TGBGGCBGG GTTTCBCT TTBGGCB TTBGGGB-3' (FRAG. NO:1873)  
(SEQ. ID NO: 1884)  
5'-GBGGCBGGG-3' (FRAG. NO:1874) (SEQ. ID NO: 1885)  
5'-GCCBGCBB BBGB-3' (FRAG. NO:1875) (SEQ. ID NO: 1886)  
5'-CGCCTGGGC C-3' (FRAG. NO:1876) (SEQ. ID NO: 1887)  
5'-GTCTGTCTCCCGTCTCTCC-3' (FRAG. NO:1339)(SEQ. ID NO:1349)  
5'-ACTGCTCTCCCGGG-3' (FRAG. NO:1340)(SEQ. ID NO:1350)  
5'-GCTTCCCGGCTTC-3' (FRAG. NO:1341)(SEQ. ID NO:1351)  
5'-GGGTGGCGGTGTCCCGGCTCCGGCGCGCGC-3' (FRAG. NO:1342)(SEQ. ID NO:1352)  
5'-GGCTTCGGTGC-3' (FRAG. NO:1343)(SEQ. ID NO:1353)  
5'-GGGTGGGTGGCGCG-3' (FRAG. NO:1344)(SEQ. ID NO:1354)  
5'-GCTGCCGGTCCGCGCGGCTGGGC-3' (FRAG. NO:1345)(SEQ. ID NO:1355)  
5'-CTTGTGCTGCTTT-3' (FRAG. NO:1346)(SEQ. ID NO:1356)  
5'-TGCTTGTCCGTT-3' (FRAG. NO:1347)(SEQ. ID NO:1357)  
5'-TGGCTGCTCCGGTCTGTGTTGTGTTGTTT-3' (FRAG. NO:1348)(SEQ. ID NO:1358)  
5'-TTTCTTCTGGGTGTGG-3' (FRAG. NO:1349)(SEQ. ID NO:1359)  
5'-CCTTGGCGTTTGG-3' (FRAG. NO:1350)(SEQ. ID NO:1360)  
5'-CTGTGGGCCCTTG-3' (FRAG. NO:1351)(SEQ. ID NO:1361)  
5'-GGGCTTGGCTTCTGGCTC-3' (FRAG. NO:1352)(SEQ. ID NO:1362)  
5'-CATCCATG ATTGCTTAGA TTGTGCTGT ATCTCTCAGG ATTATCACTG ATTACACATC CAACAGTGC CAGCCAAAAG  
GATGCCCTGA GGCAAGGGT TTCCATCTT AGGCAATTT GAGGA-3' (FRAG. NO:1353)(SEQ. ID NO:1363)

5'-CBTCCBCBTG BTGCTTBGB TTTGTGCTGT BTCTCTCBGG BTBTBCBTG BTTBCBCBTC CBBCCBGTC CBGCCBBBGG  
 GBTGCCCTGB GGCBBBGGGT TTCCBTCTTG BGGCBBBTTT BGGBB-3' (FRAG. NO:1354)(SEQ. ID NO:1364)

**Endothelin Receptor A Nucleic Acid and Antisense Oligonucleotide Fragments**

5'-GCCACCATGG AAACCTTTG CCTCAGGGCA TCCTTTTGGC TGGCACTGGT TGGATGTGTA ATCAGTGATA ATCCTGAGAG  
 ATACAGCACA AATCTAAGCA ATCATGTGGA TGATTTCACC ACTTTTCGTG GCACAGAGCT CAGCTTCCTG GTTACCACCT  
 ATCAACCCAC TAATTTGGTC CTACCCAGCA ATGGCTCAAT GCACAACATAT TGCCACAGC AGACTAAAA TACTTCAGCT  
 TTCAAATACA TTAACACTGT GATATCTTGT ACTATTGCA TCGTGGGAAT GGTGGGGAAT GCAACTCTGC TCAGGATCAT  
 TTACCAGAAC AAATGTATGA GGAATGGCCC CAACGCGCTG ATAGCCAGTC TTGCCCTTGG AGACCTTATC TATGTGGTCA  
 TTGATCTCCC TATCAATGTA TGGCTGGGCG CTGGCCTTTT GATCACAATG ACTTTGGCGT ATTTCTTTGC AAGCTGTTC  
 CCTTTTGGCA GAAGTCCTCG GTGGGGATCA CCGTCTCAA CCTCTGCGCT CTTAGTGTG ACAGGTACAG AGCAGTTGCC  
 TCCTGGAGTC GTGTTCAGGG AATTGGGATT CCTTTGGTAA CTGCCATTGA AATTGCCTCC ATCTGGATCC TGTCTTTAT  
 CCTGGCCATT CCTGAAGCGA TTGGCTTCGT CATGGTACCC TTTGAATATA GGGGTGGACA GCATAAAACC TGTATGCTCA  
 ATGCCACATC AAAATTCATG GAGTTCTACC AAGATGTAAA GGACTGGTGG CTCTTCGGGT TCTATTCTG TATGCCCTTG  
 GTGTGCATG CGATCTCTA CACCCTCATG ACTGGTGAGA TGTGAAACAG AAGGAATGGC AGCTTGAGAA TTGCCCTCAG  
 TGAACATCTT AAGCAGCGTC GAGAAGTGGC AAAACAGTT TCTGCTTGG TTGTAATTTT TGCTCTTGC TGGTCCCTC  
 TTCATTTAAG CCGTATATTG AAGAAAACG TGTATAACGA GATGGACAAG AACCGATGTG AATTACTTAG TTTCTTACTG  
 CTCATGGATT ACATCGGTAT TAACCTGGCA ACCATGAATT CATGTATAAA CCCCATAGCT CTGTATTTTG TGAGCAAGAA  
 ATTTAAAAAT TGTTCACAGT CATGCCTCTG CTGCTGCTGT TACCAGTCCA AAAGTCTGAT GACCTCGGTC CCCATGAACG  
 GAACAAGCAT CCAGTGAAG AACCAAGATC AAAACAACCA CAACACAGAC CGGAGCAGCC ATAAGGACAG CATGAACATGA  
 CCACCTTAG AAGCACTCCT GAATTCGGA AAAAGTGAAG GTGTAAAAGC AGCACAAGTG CAATAAGAGA TATTCCTCA  
 AATTTGCCTC AAGATGGAAA CCCTTTCCT CAGGGCATCC TTTTGGCTGG CACTGGTTGG ATGTGTAATC AGTGATAATC  
 CTGAGAGATA CAGCACAAT CTAAGCAATC ATGTGGATGA TTTACCACT TTTCTGGCA CAGAGCTCAG CTCTCGGTT  
 ACCACTCATC AACCCACTAA TTTGGTCTA CCCAGCAATG GCTCAATGCA CAACTATTGC CCACAGCAGA CTAATAATAC  
 TTCAGCTTTC AAATACATTA AACTGTGAT ATCTGTACT ATTTTCATCG TGGGAATGGT GGGGAATGCA ACTCTGCTCA  
 GGATCATTTA CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA GCCAGTCTTG CCCTTGGAGA CCTTATCTAT  
 TGTGTCTATG ATCTCCCTAT CAATGTATTT AAGTGTCTGG CTGGGCGCTG GCCTTTTGT CACAATGACT TTGGCGTATT  
 TCTTTGCAAG CTGTCCCCCT TTTTGCAGAA GTCCTCGGTG GGGATCACCG TCCTCAACCT CTGCGCTCTT AGTGTGACA  
 GGTACAGAGC AGTTGCCTCC TGGAGTCGTG TTCAGGGAAT TGGGATTCCT TTGGTAACTG CCATTGAAAT TGTCTCCATC  
 TGGATCCTGT CCTTATCCT GGCATTCTT GAAGCGATTG GCTTCGTCT GGTACCTTT GAATATAGGG GTGAACAGCA  
 TAAAACCTGT ATGCTCAATG CCACATCAAA ATTCATGGAG TTCTACCAAG ATGTAAAGGA CTGGTGGCTC TTCGGGTTCT  
 ATTTCTGTAT GCCCTTGGTG TGCATGCGA TCTTCTACAC CCTCATGACT TGTGAGATGT TGAACAGAAG GAATGGCAGC  
 TTGAGAATTG CCTCAGTGA ACATCTTAAG CAGCGTCGAG AAGTGGCAAA AACAGTTTC TGCTTGGTTG TAATTTTTC  
 TCTTTGCTGG TTCCCTCTC ATTTAAGCCG TATATTGAAG AAAAGTGTGT ATAACGAGT GACACAAGT TCTGCTGAAT  
 TACTAGTTT CTACTGCTC ATGGATTACA TCGGTATTA CTTGGCAACC ATGAATTCAT GTATAAACCC CATAGCTCTG  
 TATTTTGTGA GCAAGAAATT TAAAAATTGT TTCCAGTCAT GCCTCTGCTG CTGCTGTAC CAGTCCAAAA GTCTGATGAC  
 CTCGGTCCCC ATGAACGGAA CAAGCATCCA GTGGAAGAAC CACGATCAAA ACAACCACAA CACAGACCGG AGCAGCCATA  
 AGGACAGCAT GAAGTACCA CCCTTAGAAG CACTCCTCGG TACTCCATA ATCCTCTCGG AGAAAAAAT CACAAGGCAA  
 CTGTGAGTCT GGAATCTCT TCTGTATCC TTCTCTTA ATTCATCC ACACCAAGA AGAAATGCTT TCCAAAACCG  
 CAAGGGTAGA CTGGTTTATC CACCACAAC ATCTACGAAT CGTACTTCTT TAATTGATCT AATTACATA TTCTCGTGT  
 TGTATTCAGC ACTAAAAAAT GGTGGGAGCT GGGGAGAAT GAAGACTGTT AAATGAAACC AGAAGGATAT TTAATCTTT  
 TGCATGAAAA TAGAGCTTTC AAGTACATGG CTAGCTTTTA TGGCAGTTCT GGTGAATGTT CAATGGGAAC TGGTACCAT  
 GAAACTTTAG AGATTAAACGA CAAGATTTTC TACTTTTTT AAGTGATTTT TTGTCTCTC AGCCAAACAC AATATGGGCT  
 CAAGTCACTT TTATTTGAAA TGTCAATTTG TGCCAGTATC CCGAATTC GAATTCGGGA AAAAGTGAAG GTGTAAAAGC  
 AGCACAAGTG CAATAAGAGA TATTTCTCA AATTTGCCTC AAGATGGAAA CCCTTTGCCT CAGGGCATCC TTTTGGCTGG  
 CACTGGTTGG ATGTGTAATC AGTGATAATC CTGAGAGATA CAGCACAAT CTAAGCAATC ATGTGGATGA TTTCAACCT  
 TTTCTGGCA CAGAGCTCAG CTCTCGGT ACCACTCATC AACCCACTAA TTTGGTCTA CCCAGCAATG GCTCAATGCA  
 CAACTATTGC CCACAGCAGA CTAATAATAC TTCAGCTTTC AAATACATTA AACTGTGAT ATCTGTACT ATTTTCATCG  
 TGGGAATGGT GGGGAATGCA ACTCTGCTCA GGATCATTTA CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA  
 GCCAGTCTTG CCCTTGGAGA CCTTATCTAT GTGGTCATTG ATCTCCCTAT CAATGTATTT AAGCTGCTGG CTGGGCGCTG  
 GCCTTTTGT CACAATGACT TTGGCGTATT TCTTTGCAAG CTGTTCCCTT TTTTGCAGAA GTCCTCGGTG GGGATCACCG  
 TCCTCAACCT CTGCGCTCTT AGTGTGACA GGTACAGAGC AGTTTCTCC TGGAGTCGTG TTCAGGGAAT TGGGATTCCT  
 TTGGTAACTG CCATTGAAAT TGTCTCCATC TGGATCCTGT CCTTTATCCT GGCCATTCTT GAAGCGATTG GCCTGCTCAT  
 GGTACCTTT GAATATAGGG GTGAACAGCA TAAAACCTGT ATGCTCAATG CCACATCAAA ATTCATGGAG TTCTACCAAG  
 ATGTAAAGGA CTGGTGGCTC TTCGGGTTCT ATTTCTGTAT GCCCTTGGTG TGCATGCGA TCTTCTACAC CCTCATGACT  
 TGTGAGATGT TGAACAGAAG GAATGGCAGC TTGAGAATTG CCTCAGTGA ACATCTTAAG CAGCGTCGAG AAGTGGCAAA  
 AACAGTTTTC TGCTTGGTTG TAATTTTTC TCTTTGCTG TTCCCTCTC ATTTAAGCCG TATATTGAAG AAAAGTGTGT  
 ATAACGAGAT GGACAAGAAC CGATGTGAAT TACTTACTTT CTACTGCTC ATGGATTACA TCGGTATTA CTTGGCAACC  
 ATGAATTCAT GTATAAACCC CATAGCTCTG TATTTGTGA GCAAGAAATT TAAAAATTG TTCCAGTCAAT CCCTGCTGCT  
 CTGCTGTAC CAGTCCAAAA GTCTGATGAC CTCGGTCCCC ATGAACGGAA CAAGCATCCA GTGGAAGAAC CACGATCAAA  
 ACAACCACAA CACAGACCGG AGCAGCCATA AGGACAGCAT GAAGTACCA CCCTTAGAAG CACTCCTCGG TACTCCATA  
 ATCCTCTCGG AGAAAAAAT CACAAGGCAA CTGTGAGTCC GGAATCTCT TCTGTATCC TCTTCTTA ATTCATCCC  
 ACACCAAGA AGAAATGCTT TCCAAAACCG CAAGGGTAGA CTGGTTTATC CACCACAAC ATCTACGAAT CGTACTTCTT  
 TAATTGATCT AATTACATA TTCTGCGTGT TGTATTCAG ACTAAAAAT GGTGGGAGCT GGGGAGAAT GAAGACTGTT  
 AAATGAACCC AGAAGGATAT TTAATCTTT TGCATGAAAA TAGAGCTTTC AAGTACATGG CTAGCTTTTA TGGCAGTTCT  
 GGTGAATGTT CAATGGGAAC TGGTACCAT GAAACTTTAG AGATTACGA CAAGATTTC TACTTTTTT AAGTATTTT  
 TTTGCTCTC AGCCAAACAC AATATGGGCT CAAGTCACTT TTATTTGAAA TGTCAATTTG TGCCAGTATC CCGAATTC-3'  
 (FRAG. NO: ) (SEQ ID NO: 2471)

5'-GAATTCGGA AAAAGTGAAG GTGTAAAAGC AGCACAAGTG CAATAAGAGA TATTTCTCA AATTTGCCTC  
 AAGATGGAAA CCCTTTCCT CAGGGCATCC TTTTGGCTGG CACTGGTTGG ATGTGTAATC AGTGATAATC CTGAGAGATA



CAGCACAAAT CTAAGCAATC ATGTGGATGA TTTCACCACT TTTCGTGGCA CAGAGCTCAG CTTCCTGGTT ACCACTCATC  
AACCCTACTAA TTTGGTCCTA CCCAGCAATG GCTCAATGCA CAACTATTGC CCACAGCAGA CTAATAATTAC TTCAGCTTTC  
AAATACATTA AACTGTGAT ATCTTGACT ATTTTCATCG TGGGAATGGT GGGGAATGCA ACTCTGCTCA GGATCATTTA  
CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA GCCAGTCTTG CCCTTGGAGA CCTTATCTAT GTGGTCATTG  
ATCTCCCTAT CAATGTATTT AAGCTGCTGG CTGGGCGCTG GCCTTTTGAT CACAATGACT TTGGCGTATT TCTTTGCAAG  
CTGTTCCCTT TTTTGCAGAA GTCCTCGGTG GGGATCACCG TCCCTAACCT CTGCGCTCTT AGTGTGACA GGTACAGAGC  
AGTTGCCTCC TGGAGTCGTG TTCAGGGAAT TGGGATTCCT TTGGTAACTG CCATTGAAAT TGCTCCATC TGGATCCTGT  
CCTTTATCCT GGCCATTCCT GAAGCGATTG GCTTCGTCAT GGTACCCCTT GAATATAGGG GTGAACAGCA TAAAACCTGT  
ATGCTCAATG CCACATCAAA ATTCATGGAG TTCTACCAAG ATGTAAAGGA CTGGTGGCTC TTCGGGTTCT ATTTCTGTAT  
GCCCTTGGTG TGCATGCGA TCTTCTACAC CCTCATGACT TGTGAGATGT TGAACAGAAG GAATGGCAGC TTGAGAATTG  
CCCTCAGTGA ACATCTTAAG CAGCGTCGAG AAGTGGGAAA AACAGTTTTT TGCTTGGTTG TAATTTTTGC TCTTTGCTGG  
TTCCCTCTTC ATTTAAGCCG TATATTGAAG AAACTGTGT ATAACGAGAT GGACAAGAAC CGATGTGAAT TACTTAGTTT  
CTTACTGCTC ATGGATTACA TCGGTATTAA CTTGGCAACC ATGAATTCAT GTATAAACCC CATAGCTCTG TATGTTTGA  
GCAAGAAATT TAAAAATTGT TTCCAGTCAT GCCTCTGCTG CTGCTGTTAC CAGTCCAAAA GTCTGATGAC CTCGGTCCCC  
ATGAACGGAA CAAGCATCCA GTGGAAGAAC CACGATCAAA ACAACCACAA CACAGACCGG AGCAGCCATA AGGACAGCAT  
GAACTGACCA CCCTAGAAG CACTCCTCGG TACTCCATA ATCCTCTCGG AGAAAAAAT CACAAGGCAA CTGTGAGTCC  
GGGAATCTCT TCTCTGATCC TTCTTCTTA ATTCATCCC ACACCAAGA AGAAATGCTT TCCAAAACCG CAAGGGTAGA  
CTGGTTTATC CACCCACAAC ATCTACGAAT CGTACTCTT TAATTGATCT AATTACATA TTCTGCGTGT TGTATTGAGC  
ACTAAAAAAT GGTGGGAGCT GGGGGAGAAT GAAGACTGTT AAATGAAACC AGAAGGATAT TTACTACTTT TGCATGAAAA  
TAGAGCTTTC AAGTACATGG CTAGCTTTTA TGGCAGTTCT GGTGAATGTT CAATGGGAAC TGGTACCATT GAAACTTTAG  
AGATTAACGA CAAGATTTTC TACTTTTTTT AAGTGATTTT TTTGCTCTTC AGCCAAACAC AATATGGGCT CAAGTCACTT  
TTATTGAAA TGTCATTGG TGCCAGTATC CCGAATTC-3' (FRAG. NO: 2482) (SEQ ID NO: 2482)

5'-GAATTCGGGA AAAAGTGAAG GTGTAAGC AGCACAAGT CAATAAGAGA TATTTCTCA AATTTGCCTC  
AAGATGGAAC CCCTTGCCT CAGGGCATCC TTTTGGCTGG CACTGGTTGG ATGTGTAATC AGTGATAATC CTGAGAGATA  
CAGCACAAAT CTAAGCAATC ATGTGGATGA TTTCACCACT TTTCGTGGCA CAGAGCTCAG CTCTGCTGTT ACCACTCATC  
AACCCTACTAA TTTGGTCCTA CCCAGCAATG GCTCAATGCA CAACTATTGC CCACAGCAGA CTAATAATTAC TTCAGCTTTC  
AAATACATTA AACTGTGAT ATCTTGACT ATTTTCATCG TGGGAATGGT GGGGAATGCA ACTCTGCTCA GGATCATTTA  
CCAGAACAAA TGTATGAGGA ATGGCCCCAA CGCGCTGATA GCCAGTCTTG CCCTTGGAGA CCTTATCTAT GTGGTCATTG  
ATCTCCCTAT CAATGTATTT AAGCTGCTGG CTGGGCGCTG GCCTTTTGAT CACAATGACT TTGGCGTATT TCTTTGCAAG  
CTGTTCCCTT TTTTGCAGAA GTCCTCGGTG GGGATCACCG TCCCTAACCT CTGCGCTCTT AGTGTGACA GGTACAGAGC  
AGTTGCCTCC TGGAGTCGTG TTCAGGGAAT TGGGATTCCT TTGGTAACTG CCATTGAAAT TGCTCCATC TGAACCTGT  
CCTTTATCCT GGCCATTCCT GAAGCGATTG GCTTCGTCAT GGTACCCCTT GAATATAGGG GTGAACAGCA TAAAACCTGT  
ATGCTCAATG CCACATCAAA ATTCATGGAG TTCTACCAAG ATGTAAAGGA CTGGTGGCTC TTCGGGTTCT ATTTCTGTAT  
GCCCTTGGTG TGCATGCGA TCTTCTACAC CCTCATGACT TGTGAGATGT TGAACAGAAG GAATGGCAGC TTGAGAATTG  
CCCTCAGTGA ACATCTTAAG CAGCGTCGAG AAGTGGGAAA AACAGTTTTT TGCTTGGTTG TAATTTTTGC TCTTTGCTGG  
TTCCCTCTTC ATTTAAGCCG TATATTGAAG AAACTGTGT ATAACGAGAT GGACAAGAAC CGATGTGAAT TACTTAGTTT  
CTTACTGCTC ATGGATTACA TCGGTATTAA CTTGGCAACC ATGAATTCAT GTATAAACCC CATAGCTCTG TATTTTGTGA  
GCAAGAAATT TAAAAATTGT TTCCAGTCAT GCCTCTGCTG CTGCTGTTAC CAGTCCAAAA GTCTGATGAC CTCGGTCCCC  
ATGAACGGAA CAAGCATCCA GTGGAAGAAC CACGATCAAA ACAACCACAA CACAGACCGG AGCAGCCATA AGGACAGCAT  
GAACTGACCA CCCTAGAAG CACTCCTCGG TACTCCATA ATCCTCTCGG AGAAAAAAT CACAAGGCAA CTGTGAGTCC  
GGGAATCTCT TCTCTGATCC TTCTTCTTA ATTCATCCC ACACCAAGA AGAAATGCTT TCCAAAACCG CAAGGGTAGA  
CTGGTTTATC CACCCACAAC ATCTACGAAT CGTACTCTT TAATTGATCT AATTACATA TTCTGCGTGT TGTATTGAGC  
ACTAAAAAAT GGTGGGAGCT GGGGGAGAAT GAAGACTGTT AAATGAAACC AGAAGGATAT TTACTACTTT TGCATGAAAA  
TAGAGCTTTC AAGTACATGG CTAGCTTTTA TGGCAGTTCT GGTGAATGTT CAATGGGAAC TGGTACCATT GAAACTTTAG  
AGATTAACGA CAAGATTTTC TACTTTTTTT AAGTGATTTT TTTGCTCTTC AGCCAAACAC AATATGGGCT CAAGTCACTT  
TTATTGAAA TGTCATTGG TGCCAGTATC CCGAATTC-3' (FRAG. NO: 2470) (SEQ ID NO: 2470)

5'-GCCACCATTG AAACCTTTG CCTCAGGGCA TCCTTTTGGC TGGCACTGGT TGGATGTGTA ATCAGTGATA ATCCTGAGAG  
ATACAGCACA AATCTAAGCA ATCATGTGGA TGATTTACC ACTTTTCGTG GCACAGAGCT CAGCTTCCTG GTTACCACTC  
ATCAACCCAC TAATTTGGTC CTACCCAGCA ATGGTCAAT GCACACATAT TGCCACAGC AGACTAAAAA TACTTCAGCT  
TTCAAATACA TTAACACTGT GATATCTTGT ACTATTTTCA TCGTGGGAAT GGTGGGGAAT GCAACTCTGC TCAGGATCAT  
TTACCAGAAC AAATGTATGA GGAATGGCCC CAACGCGCTG ATAGCCAGTC TTGCCCTTGG AGACCTTATC TATGTGGTCA  
TTGATCTCCC TATCAATGTA TGGCTGGGCG CTGGCCTTTT GATCACAATG ACTTTGGCGT ATTTCTTTGC AAGCTGTTCC  
CCTTTTGTGA GAAGTCCTCG GTGGGGATCA CCGTCTCAA CCTCTGCGCT CTTAGTGTG ACAGGTACAG AGCAGTTGCC  
TCTGGGATTG GTGTTGAGG AATTGGGATT CCTTTGGTAA CTGCCATTGA AATTGCCTCC ATCTGGATCC TGCTCTTAT  
CCTGGCCATT CCGAAGCGA TTGGCTTCGT CATGTTACCC TTGAATATA GGGGTGGACA GCATAAAACC TGTATGCTCA  
ATGCCACATC AAAATTCATG GAGTTCTACC AAGATGTAAG GGAATGGTGG CTCTTCGGGT TCTATTCTG TATGCCCTTG  
GTGTGACTG CGATCTTCTA CACCCTCATG ACTGGTGAGA TGTGAACAG AAGGAATGGC AGCTTGAGAA TTGCCCTCAG  
TGAACATCTT AAGCAGCGTC GAGAAGTGGC AAAACAGTT TTCTGCTTGG TTGAATTTT TGCTCTTGC TGGTCCCTC  
TTCAATTAAG CCGTATATTG AAGAAAACTG TGTATAACGA GATGGACAAG AACCGATGTG AATTACTTAG TTTCTTACTG  
CTCATGGATT ACATCGGTAT TAACTTGGCA ACCATGAATT CATGTATAAA CCCCATAGCT CTGTATTTTG TGAGCAAGAA  
ATTTAAAAAT TGTTCAGT CATGCTCTG CTGCTGCTGT TACCAGTCCA AAAGTCTGAT GACCTCGGTC CCCATGAACG  
GAACAAGCAT CAGTGGGAG AACCACGATC AAAACAACCA CAACAGAC CGGAGCAGCC ATAAGGACAG CATGAACCTGA  
CCACCCTTAG AAGCACTCT-3' (FRAG. NO: 2469) (SEQ ID NO: 2469)

**Substance P Antisense Nucleic Acids and Oligonucleotide Antisense Oligonucleotide Fragments**

5'-CTGCTGBGGC TTGGTCTCC GGGCBTCTT CTGCBGBBG TGCTCBBBG GCTCCGCBG TTCCTCTTG BTCTGGTGGT  
GTCGTBCCBG TCGGBCCBG BTTCBGBTC BTCBTGGCT CTBTCTCT CTGCBBCBG CTGBGTGGBG BCBGBBBBB  
BGBCTGCCB GGCBCBGG BTTCBTGT TGGBTTTG GBCGGBCBG CCCGCGGGT GCTGAGTTT TCTGGTCTC  
CCGBGCGBC GTGGTCGCTC CGCGTTCTC TGGTCTCTC GGTCCGCGG GGTGCTGTCT GGTGCTGTC GTGGCTTGG  
TCTCCGGCG GTTCTCTCC TTTCCGC-3' (FRAG. NO:1877) (SEQ ID NO: 1888)

5'-CTCC GGGCGB-3' (FRAG. NO:1878) (SEQ ID NO: 1889)  
5'-GGCCBCBGG-3' (FRAG. NO:1879) (SEQ ID NO: 1890)  
5'-GGGTCTCCGGGCG-3' (FRAG. NO:1880) (SEQ ID NO: 1891)  
5'-GGG TCTCCGGGCG G-3' (FRAG. NO:1881) (SEQ ID NO:1892)  
5'-CGTGGTCTGCTCCGC-3' (FRAG. NO:1355)(SEQ. ID NO:1365)  
5'-GTTTCTCTGGTTCCTCCG-3' (FRAG. NO:1356)(SEQ. ID NO:1366)  
5'-GTCCCGCGGGGTGCTG-3' (FRAG. NO:1357)(SEQ. ID NO:1367)  
5'-TCTGGTCTGCTGCTG-3' (FRAG. NO:1358)(SEQ. ID NO:1368)  
5'-GGCTTGGGTCTCCGGGCG-3' (FRAG. NO:1359)(SEQ. ID NO:1369)  
5'-GTTTCTCTCTTTTCCGC-3' (FRAG. NO:1360)(SEQ. ID NO:1370)  
5'-CTGCTGBGGC TTGGGTCTCC GGGCGBTCT CTGCBGBBGG TGCTCBBBGG GCTCCGGCBG TTCCTCCTTG BTCTGGTCTGCT  
GTCGTBCCBG TCGGBCCBGT BBTTCBGTCT BTCTTTGGCT CCTBTCTCT CTGCBBCBGG CTGBGTGGBG BCBBGBBBBB  
BGBTGCCBB GGCCBCBGG BTTCBTGT TGGBTTTGCT GBCGGBCBGT CCCGCGGGT GCTGAGTTTCT TCTGGTTCCT  
CCGBCGCB-3' (FRAG. NO:1882) (SEQ ID NO: 1893)

#### **Substance P Receptor Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-GGGCTBBGBT GBTCBCBTC BCTBCCBCTG TGCCBCCBC BGBGGTCBCC BCBTGBCCG TGTBGGCBGC TGCCBBBGG  
BCBTTTGCC BGGCTGGTTG CBCGBBCTGB TTGGGTTCG BGGTGTBGT GGBGTGTTT GGGGBBGGT CTGBGTCCBC  
CGGGGBGBCG TBTCCBTTT CGBBGTBGG CGGTBBBGGC CTBCTBTCTG TBCBCCBCCC CCTCTGCBG CBGBGTCTG  
TCGTGGCGCC TGGGGCTCBG GGTCCGGG TAAGATGATC CACATCACTA CCACGTGTC CACCACAGAG GTCACCACAA  
TGACCGTGA GGCAGTGC CAAAGGACAA TTTGCCAGG TGGTGCACG AACTGATTGG GTTCCGAGGT GTTAGTGGAG  
ATGTTGGGG AGAGTCTGA GTCCACGGG AGGACGTTAT CCATTTCGAA GCTAGGCGGT AAAGCCCTAC TATCTGTACA  
CAACCCCTCT CTGCAGCAGA GTCCTGCTG GGCCTGTTG GCTCAGGGTCT CGTCTGTCG TGGCGCCTGG GGCTCTCTT  
TTGTGGGCTC TTTGGTGGCT GTGGCTGTG TCTCTGTGGT TGCTGCCCTG GGTCTGGGGG TGTGGCCTTG GGGCCGCTCT  
CTGGCTCTCT CTCTGGGGC CCC-3' (FRAG. NO:1883) (SEQ. ID NO:1894)  
5'-GGGBGGBCG-3' (FRAG. NO:1884) (SEQ. ID NO:1895)  
5'-GGGTC CG-3' (FRAG. NO:1885) (SEQ. ID NO:1896)  
5'-GGGCC CCC-3' (FRAG. NO:1886) (SEQ. ID NO:1897)  
5'-GTCCTGCTGGCGCCTGGGGCTC-3' (FRAG. NO:1361)(SEQ. ID NO:1371)  
5'-TTCTTTTGTGGGCT-3' (FRAG. NO:1362)(SEQ. ID NO:1372)  
5'-CTTTGGTGGCTGTGGCTG-3' (FRAG. NO:1363)(SEQ. ID NO:1373)  
5'-TGGTCTCTGTGGTTG-3' (FRAG. NO:1364)(SEQ. ID NO:1374)  
5'-CTGCCCTGGGTCTGG-3' (FRAG. NO:1365)(SEQ. ID NO:1375)  
5'-GGGTGTGGCCTTGGGCGTCTCTGCTCTCTCTGTTGGCCCC (FRAG. NO:1366)(SEQ. ID NO:1376)  
5'-GGGCTAAGAT GATCCACATC ACTACACGT TGCCCAACAC AGAGGTACAC ACAATGACCG TGTAGGCAGC  
TGCCCAAAGG ACAATTTGCC AGGTGGTTG CACGAAGTGA TTGGGTTCG AGGTGTTAGT GGAGATGTTT GGGGAGAGGT  
CTGAGTCCAC CGGGAGGACG TTATCCATTTC GAAGTAGGC GGTAAAGCCC TACTATCTGA CACAACCCCT  
CTCTGCAGCA GAGTCTGTC GTGGCGCTG GGGCTCAGGGTCC-3' (FRAG. NO:1367)(SEQ. ID NO:1377)  
5'-GGGCTBBGBT GBTCBCBTC BCTBCCBCTG TGCCBCCBC BGBGGTCBCC BCBTGBCCG TGTBGGCBGC TGCCBBBGG  
BCBTTTGCC BGGCTGGTTG CBCGBBCTGB TTGGGTTCG BGGTGTBGT GGBGTGTTT GGGGBBGGTCT TGBGTCCBCC  
GGGBGGBCG TBTCCBTTT GBBGCTBGG GGTBBBGGC BTCTBTCTGT BCBBCCCCC CTCTGCBGC GBGTCTGTCT  
GTGGCGCTG GGGCTCBGG TCC-3' (FRAG. NO:1368) (SEQ. ID NO:1378)

#### **Chymase Antisense Nucleic Acids and Oligonucleotides Antisense Oligonucleotide Fragments**

5'-GGBGCTGBTB CTGCBGATTT CBGBGGBBG BBCCCTGBTB CTCBCCBCT TCBGCTCTGG BGCBCBBBG BBBGBGCBGC  
BGGGGGBBG BGGGBBGBG CBTCTCCCB GGBGGCTGC CTGBGCBBT GCTGGTTTC CTTCBCTGCT TGGGTTTTB  
TBBCTCCBG BBGGCBBG BGGGCBGG CGTTTTCTT TCTCGCTGGT TTCTCTTCC TGGCAGTGGG TGGGGGTGGG  
GGTGGGGTG CTCTCTGTT CTTGGGGTG TCTCTGTCT CTGGGCTTTT CTCCCTTTT CTCTCTGCT TGTTTTCTG  
GGGCTCTCT CTGCTCTGT TCCCTTGCC TGCCCTCTT CCCTCTCTG TCTCTGTC CTGTGTTCC CCGCTCTCC  
CTCTCTGAC CTCTTTTCC TCCGCTGGT GGGGCCCTGC CTGTTCTCTG CTCCCTGGCT TGGGTTTTCT TCTGTGTCT  
TTCTCTCT CTGTTGGTGGC TTCTCTTCT TTTGTCTT CTGGGTGCC CTCTCTCT TCTTGGGTCC TTGGTGTCTG  
GGCTGGG TCCAGTTAA TACATAATCA ATATGCAAT TATTAATACA TCTCTCATG TCCACTCCC CTGTATCTTG  
CAATCTTGA CTGCAATTC CATCTCTT ACCTTCCCTA GAGGCCAAT CATTTCTT GAAAAACCTG GCATTTCCCA  
GAAAAAAGG TGAAGGGCTG GGAGCTGTC GTTGCTCTGA TTTGCTCCT CTGCCCTTG TTCCAAATGT GGTGGAAAG  
AAGCACTATT GAAAAATCCC TAAACGCACC CTTGCAGGT TGGCTTACC CTGTAGCCAT GGACATGC TGTGATACC  
ACCTGCCTCA TGAGTCTCA ATAATTTGCC CTGACACT ATCTACCCA TCAGCCTTAC CAAACCATCA CTGTCATCT  
GGGCAGCATC TGCCCTTCAA GAGACTAAGG AATCTCTTG CAACCAAGAA TGAAGTACC AATGAGACAC CCTTAAAGG  
CCCAGCACA TATAGAAATC CCACAATATG GTAATCCAG TAAGGAGCTA TCAAGCCATT GCAGGACCAT CTAGAATACA  
ACTAGAGTAT AGTTCTTTT AATCCAGGAA CTACTCTA ACAGCTTGG TCACAGGAAC CAGAAGTGAA GATGATGAGG  
ATCAGGGCTG AGCTGTGAG CACCAGCTCC ACCACTGACA CCAACCACAG ATTAACAAG CATCTTGTG ACCCTGGGA  
TGGAAGAAT AGTTGTTGCC TTATCAACCT CCCCACAGC CCACACAGAA AAGATAAAT CATCATGGCT ACAGTGTAC  
AGAAGATGAT GACCAAGGA GTAGGCTGC CTGAGTGAAT GCTGAGAGT ATAATGGGAG CAGTAGCATC TCAGACTACA  
CAGCAGAAAC CATCCACATA AAGAGCTTTG CCAAACTTA TGATAAAGG CACCCTCAGA GACTCTCCCT ACTTTAATAT  
TAGCCCATG CAGAAATGGT GAGTGAAAG AGAAATCTTA GGAAGAACC CTAAAAAG CAAAATGCTT TTAGGTTTTG  
TGCTGAAGAG CTGGAAGG AAATAAGGAC ACACAGCTG AGAAATCTT CTCCTGCCC AACACTGGGA TAATCTCAA  
GGATCTCTC ATATCTCATT CTCCTGGATA CACTGTCCAC TCAGAAATAT TGTGAGAGT GCAGTAATTC AAAAGTGAGC  
TATTGTGTTA GGAGTGAAG CAAGAGTATC GTAAATATA TCAATTTGA AATGAATCT CTAAATTC TTTATAGATG  
TTAATGTAA GCCAGAGCT ATTAACGAT AAACCTTAAA TTCAGAAAA ACTTGGTCT TCAGAACTA TAGAAACAGG  
CAGGACTTAT TGCAGGGCA AACACAGAGT GAGCTCCAGC CTGCTTCAGG AAAATCTGCC AGTGCCATGA AGGATGACT  
CTGTCTGCT CACTGCACTA CTGCTCAGTA TGAGCCCATG CCATCAGCTG TCCCTGACCC ACAGGAGTTC TTTAGAAGAG  
ACTGTTCAAC AAAAGTTTCT AGGGTGTCT ATACCTGCCA ACTCGAGGT TAAACAAGT TGCATAGAAA TGCTCAATCA

AGAAAGACAC AGTCATTACT CAGAGAATAA TAAACAGCCT GGCAGCACAT GAATGAATAG AAAAAAGATG TTACATGCAA  
AGCATGAAAT AACCAAATTC CATAACAGAT GTTAATCTGT AATGTGTTTA GGAGAATTTA GAGGAAGTAT AAGATTTATT  
CTTTCATCAA AAAAAATTATA GCCAATGAGG ATATATCTAT CAATTATCCA TCAAGTGGTG ATATGGCAGC ACAAGGTAAA  
ACACAAAGGA ATAAACCAA CGTTTATTAA GAACCAATCA TGTGGCATTT CACATTGAGC ATCATATTTA ATTCTGAAAA  
AAATCCTTGT ACTGTATCAT TCTTCATATT TTATGGATGC AGTAACTAAG GCTGAGAACT TAAAAATTTT TCCTAAGTTC  
AGACACATAG CTAAGTGGCA GAACCAAGAT TCAAACCTAC CCCATCTAAC TGCAGAGCAA ACTGCATGCC TTAATGTCA  
AAGTGAATAC TAGCACAGTT AATACAATGT TTGGAACCTC AGAGAAGGAA TGATCCCTCT GCTTATAGT TACTAAGGAA  
TCATTGCCAT TATTTAAATG CCAGTGCTTC TACATCAGGC CCAAATTTTC TGTCTACTA ACTGTGAATC AAGACTTGAT  
TCAACCTCTA CTGAGTATC TGCCGCAATG AGAAATCACT TACCTCCACT AACCACACAT TTATTTTATA ACAACAGATT  
GTTAGTAAGT CCTTCTTAT ACATACTCAA CAGCTGCTTC CCAAGATGCT GTAGGATTAT GTCTAGAGTC AAAGTAGCCA  
GAAGCAATGT CCAAATACA CCATAACACT GTGCAGCAA GGTCTACTA CCACTTGTTT GGCCCAAACA TTCTAGGCCAG  
CACTGGATAT CTGAATCATC AATTATTTCC ACAAACTAGT ACCCTCTAC CAGTCACCTC CACTAGAAGA ATTAATTTCA  
CATGATAATA GCTCCCTCAT GTTACTCCT TCTAAGTCAA ATTGTACACC CCTTTATCTG ATTAACAGAG TACTAAGTCA  
ATGACCTAAA TGCAAGAGAA CTGGGAATGG ACGTTTGTGG ATTCTACCTT AGTAAGGCAA AGTTATCATT GGGAAATCCT  
CTAATACAGG AAGGGTGTTC CAGAGACATT AAGGAGCCAT ATAAATGGAA AATGTCCACT ACAATCCATC ACTTGGTTGC  
CCCACATCAA CATTCACTCT TTTGGCACAC TTAAGATTTC CAAGAACAAA AATTATCCCA CTGAACATAA TCTTACTAT  
CTTTTATATA AAGGAAAATT AGACTTGACT CAGCAGAACT GAAATAACCC AGCTCTAACA GTTACTGCTT TAACTTCAA  
GTACTGTGTC TCTAGGTGAT ACCTGCTCCA ACAATAGTTT GTTCACATTT TCAATTTGAT ATTCTTAGT CTCCCAACTT  
GATAACTGTA CCTAAACCA TAAAGTTTAC TACCAACTG CTATATATAA AATAACCAA GGGGAAGAA GAAAGAGAAA  
AAGGAAATCT CTTAAATATC ACAGGTATAC ATATGACAAA GCAAAGAAGG AAATGTGAGC AGATAGTGCA GTCCTCGTTT  
CTGAAATTGG TCCCCTGACT GGGGCTATAC CTATTCCATT TCCTCACCTC CAGCCAGGCA GGTGGAGCAA AAACCTAAGT  
CTTGGTGGAT CTGAATCTTG ATGCTGTGGA GCTGCTTAC TAGCCCCAGA CTACCTGCCT CTCAATTTCT AATTATATCA  
GTGAAAGCAA ACAGCTTTGA TTTGTTTAAAG CCTCTGATTT TTTGGTCTAA CTGATGTAAG ACCACAAGGA CAAGAGTTCT  
CCAGCTCCGG ATTCTCTTCT GTTCTGTAA TGGTGAATG CCCGAGAGAA GAGTTGCCAA CTTTGGCAA TAAAAATAC  
AGGATTTCCAG TTAATTTCAA ATTTAGATAA ACAACAATTT TTAGTATTA GTGTGTCCCA TTCAATTTT GGACACTT  
AACTAAAAA TGATTGTGTG TTCATCTGAA ATACAAATTT AACTGGGCAT TCTGAATATT CTCTGGCAAC CCCGAGAGA  
GTGAAGAAAG TGGTACAAGG AACTTAAGA AGACCAGATT TGAAGAGACA TTACGGATGT GTTAAATGT CTTATTCTAG  
AGAGAGTTAG AGCTGTAGGT AGAATTTGGG AAATTAAGTT AAAAGCAGAC ACAGAGACCT GGCCAATATA TACTAAGGAG  
TGGATCACTC TGGTCACAAG CCCAACCCTGA GACCAAGGGC ATAGTGAGAT GATTTGGGAA AGGCATTAT AACTACTCA  
TCCCCTGCTT TGAACATAA GCCTTATAA TCTCCAAGAG AAATGACAGT CCACCATGTG GACTGCTTTC TGTAAGTCCA  
GGGAAAATAA AAGCTATGTG CTGAAACCC ACTTGTGTA TATAAGGTG TGTGATCTTT GTCATGTTAA TGGGTCTGAG  
TATCAATTTCT ACAATTTGTA AGTGACAGTA ATGGTGTGTC CCCAGTTGT TGTGGAAAGC TGTATTCTTA ATGCAACAGT  
AGGAAACCCC AGCCTCTCTG GAGCAAACAC CCTTCTACAT CTTTACTTCC CTGCACATT GGCAGGACTC TATTCCTCTA  
TTTCTCTCTA GTGCTAGAGC AGAAAGGGAC CTGATTTGA TATCAGGAAA ATCTATTTCT GAACATAAG CTATGATAGC  
TGATTTAAAA AATTGACTAT CATGACATGA TAATGATCAT AATGGTAATA CATATTGATA GGGTGTCCGT GAAAGTAATA  
ATATATCTAA GAGTTGTGAC AATATATGAT ACGCTAGAC TCTCAGAAAA TGCTAATTCC AATCCCAATT GCTCTTTGCA  
TAAAGTTCTG TCCTAGGGTC TGTCTTTTC CCACATCTAC CCTCCTTGG TCTCTCTTGT GCTCTTTTCA TGTGTTTTCAG  
AGGAGGAGAG AGATCCAGGT CAATGTTTTT CAAATTACAA GGAATTATCA TTTAAATGGG GAAGAAGCTC AAGGTTTGAC  
GTGTAGTGA ATTGGAGTGG AGTGGAGTGG AATGGAACT AACAGGAAGA CACTGCACAT GGTAAAGATA AAGATTGTTT  
CCTGAAACCT TTAATTTGTG CTTACATACT CACACATACA TATGTGCATG CACTGGGACT CTGCAATATG CATTCTGAC  
TATGGAACAT AGCCATAAAA GTCTTTGAC TGAACGTTCA GTGGGCCCTT CACAAGCTGC CTAATTTGGG AAAGAAAAAC  
ATGGTCCCTC CATTTCTGCT CCCCAACTCC AGAAAAGTCA CCATAGTTGA GGGTACATCT GAGAAGCCAG CACTTGGGAG  
TTCAGGGCTC AAGTTCTTTT CTAGAAAAAC ACTGGGTGAT TCTAGGGGAA CTTCCGATCA GAAACAGCCA ATTCAGAGTG  
AGAGAAGAAA ACGTGACCAT GCAGTTCCTG TGGTTACCAG CTTGGCCCT CTCTTGCTT CTCTCCCTCT GCTGCTCTT  
CTCTTGCTGCT CCAGAGCTGA AGCTGGTGAG TATCAGGGTT CTTCCCTCTG AAATCTGCAG TATCAGCTCC TGAACAAAAG  
ATGTTTAGTC TGAATAGCT GACTCTTAAA CAGGGTTCCA AGATCTCTCT TCAAGAGTCC CACAGAGGAA ATTTCCACTT  
GGGATGTGTG TCACCCACCC CCCACCCCA CCCACTGCCA TTCTCTACAG CTTAGGACAC CCCAGGAAC AAGGAATTC  
ACCTCAATTG TAGAAAAGCC CAGAGCAAGT GGAAGGAAAA GGGGTATCCC CAGGAAAAA GACATGTCTT CTTAATCTTC  
TGAGCATCAG GGCTACCCAT TACTTTGTGA CTTTCTCAT CTGTGACCAT GCTCAAGAGC TATGGAGATA TCTAAACAG  
GAACCTGGAC AGTGGGTCTT ACACAGAGAC AGAGGAGAGT GGGCCAGGGC AAGGTGGGAG TGGGAGAAGT  
CTGAGATGAA AACATCAGAA TGGAGCAGAG GCAAGAATGA GATTTACCT GGGAGGTTAT GGGTGGGGAA AGATACGAAA  
TACAGGAGAC AGGAGAGGGA AGATGGGCGG AACACAGGGT GAGAATGAGA TTCCAGGGAA GCCTAGCTCA GCTTTAACCC  
AATTTGTCCA TTCATTGGAG AGAGTATCTA TGGCCGTGTT CAAACCTTG GGTGCTCTGT TCCAGGGGAG ATCATCGGGG  
GCACAGAAAT CAAGCCACAT TCCGCCCTC ATGCGGCTA CTTGGAAAT GTAACCTTCA ACGTCCCTC AAAATTTTGT  
GGTGGTTTCC TTATAAGACG GAACCTTTGT CTGACGGGTG CTCAATGTGC AGGAAGGTGA GACAACAGGG TCTATTATC  
TCCAAATGGG AGATGAACAA CCAGAGTAGC ATCCAGGAAT ACACCTGCAC TGGGACTGA AGAGGGGGTC CTGGGTCTTG  
TCAACTTTCA GGAGAGGGAA GACTTTGGGC TGAAGACTT TAGTCTGTG TTGAATAGTT CTTGAGCCT CAGTCACTGA  
GCTAAGCTCC CTTGGGAGGA AAAGGAGGTC CTGTCGAAG GTCCCTCTTG TTGACGTAGC ACCCTCACC CCTACCAAC  
TCAAGACACA CGGCTCACTT TTCAGGGCCC CACCCAGTCT CAGGGCCACT TCCTCTATGG CCTTTTCAAG AACACTGGCT  
CTAGTTCTCA GGGTCTGAA CCCATCATTT TATGGGAGCA GAGAACAGGT CTACATAAGA CCCCCTTTT CCGCTTTTAA  
CTGATATCTC CTGCTTCAGG GGCTGGCCCT CATGAGGGT TCCTTGAAAT AGGAAGTGTG AACCTGTCTC CTGAGTCTCT  
CCCTGGCCTG TTCAGTCCCC AGCAATTCCA GGGGTCTGAG AAATTTGTG TGTTCCTGA GAAAGCTCTT TCATGAGTTA  
AGCCTGAGCC CTCAAATGCC ACAAGTGGCC CATGAAAAGG GAGATGGGTA GAGTCCGGCN ACCCAGTGAC AGAGTTTAGT  
CCTCTTTTCT CAGAATGAGC TCACCTCAGA AGAAACCCCA AGCCATCACT GTCGCTCCT TTTCTCTCT TCTTCTCAC  
AGCAGGTCTA TAACAGTCAC CCTTGGAGCC CATAACATAA CAGAGGAAGA AGACACATGG CAGAAGCTTG AGGTATATAA  
GCAATTCCTG CATCCAAAAT ATAACACTTC TACTCTTAC CACGATATCA TGTTACTAAA GGTGACAA CTTCTCTCT  
CCCTTCCAC TTCCCATCT CTAAGCTTC TCCTTCAGGT CTTCAATGCC CTGAATTTT CTTAGGACTT GGCTATAACA  
TGAAGCTACT CACCTGTCTC CTCCCTGATC ACCTCAACT GTCCAGAGCC CATTCGAGG ACTGACAGTC CTTCAATCCC

TTCACAGTTG AAGGAGAAAG CCAGCCTGAC CCTGGCTGTG GGGACACTCC CTTCCCCATC ACAATTCAAC TTTGTCCCAC  
CTGGGAGAAT GTGCCGGGTG GCTGGCTGGG GAAGAACAGG TGTGTTGAAG CCGGGCTCAG AACTCTGCA AGAGGTGAAG  
CTGAGACTCA TGGATCCCCA GGCTGCGAGC CACTTCAGAG ACTTTGACCA CAATCTTCAG CTGTGTGTGG GCAATCCCAG  
GAAGACAAAA TCTGCATTTA AGGTGATCCT CCAACTAGGT TTCCTCTCCA AAATCACTG TTCAGGGACC TGAATGCTCT  
TAGAAGGAGA TGGGGTCAGC AGGTTGTCAG TACAGTGACA GGGTGAGCAT CACAGGAATT GTGTCTCTCC CGTGGTCCAA  
GACAGCCTCT GACCATCCAT TCCAGTCTAC TGCATGGGTG GCATGGGGTG ACTGTGGAGA ATGTGGATGA CCGTCCCAAG  
AAAGGAAGAA GGGGCATCAG AACTAGATGT ATAAGTGAGG AGCTCCACCT CCTGGGTCTG ACTTTAGGTC TCACTGTGAC  
TCCAAGCTGG CTGGCAGACA GGAGTGGAGG ACTTCCCGGG CTCACCTTCT TCTCTCTCTC CTCCCCCTAC AGGGAGACTC  
TGGGGGCCCT CTTCTGTGTG CTGGGGTGGC CCAGGGCATC GTATCCTATG GACGGTCCGA TGCAAGCCCC CTGTCTGTCT  
TCACCCGAAT CTCCCATTAC CGGCCCTGGA TCAACCAGAT CCTGCAGGCA AATTAATCCT GGATCCTGAG CCAGCCTGAA  
GGGAAGCTGG AACTGGACCT TAGCAGCAAA GTGTGTGCAA CTCATTCTGG TTCTACCCTT GGTTCCCTCA GCCACAACCC  
TAAGCTCCA AGAGGTCTCC TACAGGTAAC AGAATTTCA ATAACTTCA GTGAAGACAC AGCTTCTAGT CGTGAGTGTG  
TGCCCTCTC TGCTGTCTC TTCTCTGCA CATGTGACCT GATTCACAGC CCAAGCACCA AGGA ATCATCGGGG  
GCACAGAATC CAAGCCACAT TCCCGCCCT ACATGGCCTA CCTGGAATTT GTAACCTCCA ACGGTCCCTC AAAATTTTGT  
GGTGGTTTCC TTATAAGACG GAACTTTGTG CTGACGGCTG CTCATTGTGC AGGAAGGTCT ATAACAGTCA CCCTGGAGC  
CCATAACATA ACAGAGGAAG AAGACACATG GCAGAAGCTT GAGGTTATAA AGCAATCCG TCATCCAAAA TATAACACTT  
CTACTCTTCA CCACGATATC ATGTTACTAA AGTTGAAGGA GAAAGCCAGC CTGACCCTGG CTGTGGGGAC ACTCCCTTC  
CCATCACAAT TCAACTTTGT CCCACCTGGG AGAATGTGGC GGGTGGCTGG CTGGGGAAGA ACAGGTGTGT TGAAGCCGGG  
CTCAGACACT CTGCAAGAGG TGAAGCTGAG ACTCATGGAT CCCAGGCCT GCAGCCACTT CAGAGACTTT GACCACAATC  
TTCAGCTGTG TGTGGGCAAT CCCAGGAAGA CAAAATCTGC ATTTAAGGGA GACTCTGGGG GCCCTCTTCT GTGTGCTGGG  
GTGGCCCAAG GCATCGTATC CTATGGACGG TCGGATGCAA AGCCCCCTGC TGTCTTACC CGAATCTCCC ATTACCGGCC  
CTGGATCAAC CAGATCCTGC AGGCAAATTA A-3' (FRAG. NO:1887) (SEQ. ID NO:1898)

5'-ATCATCGGGG GCACAGAATC CAAGCCACAT TCCCGCCCT ACATGGCCTA CCTGGAATTT GTAACCTCCA ACGGTCCCTC  
AAAATTTTGT GGTGGTTTCC TTATAAGACG GAACTTTGTG CTGACGGCTG CTCATTGTGC AGGAAGGTCT ATAACAGTCA  
CCCTTGGAGC CCATAACATA ACAGAGGAAG AAGACACATG GCAGAAGCTT GAGGTTATAA AGCAATCCG TCATCCAAAA  
TATAACACTT CTACTCTTCA CCACGATATC ATGTTACTAA AGTTGAAGGA GAAAGCCAGC CTGACCCTGG CTGTGGGGAC  
ACTCCCTTC CCATCACAAT TCAACTTTGT CCCACCTGGG AGAATGTGCC GGGTGGCTGG CTGGGGAAGA ACAGGTGTGT  
TGAAGCCGGG CTCAGACACT CTGCAAGAGG TGAAGCTGAG ACTCATGGAT CCCCAGGCCT GCAGCCACTT CAGAGACTTT  
GACCACAATC TTCAGCTGTG TGTGGGCAAT CCCAGGAAGA CAAAATCTGC ATTTAAGGGA GACTCTGGGG GCCCTCTTCT  
GTGTGCTGGG GTGGCCCAAG GCATCGTATC CTATGGACGG TCGGATGCAA AGCCCCCTGC TGTCTTACC CGAATCTCCC  
ATTACCGGCC CTGGATCAAC CAGATCCTGC AGGCAAATTA A-3' (FRAG. NO:) (SEQ. ID NO:2467)

5'-TCCAGTTAA TACATAATCA ATATGCAATT TATTAATACA TCTCTCCATG TCCACTCCCC CTGTATCTTG CCATTCTTGA  
CCTGCATTTC CATCTCCTT ACCTTCCCTA GAGGCCAAT CATTCTCTT GAAAAACCTG GCATTTCCTA GAAAAAAG  
TGAAGGGCTG GGAGCTGTCC GTTGTCTGA TTTGTCCCT CTGCCCTGC TTCCAAATGT GGTGGGAAAG AAGCACTATT  
GAAAAATCCC TAAACGCACC CCTGCAGGGT TGGCTTACC CTGTAGCCAT GGACACATGC TGTGATACC ACCTGCCTCA  
TGAGTCTCAC ATAATTTGCC CTTTCACT ATCTACCCCA TCAGCTTAC CAAAACCTA CCTGCATCT GGGCAGCATC  
TGCCCTTCAA GAGACTAAGG AATCTCCTTG AATCAAGG GCTAGTACC AATGAGACAC CTTTAAAGGC CCCAGCACAA  
TATAGAAATC CCACAATATG GTAATCCCAG TAAGGAGCTA TCAAGCCATT GCAGGACCAT CTAGAATACA ACTAGAGTAT  
AGTTCTTTC AATCCAGGAA CTATACTCTA ACAGCTTGGC TCACAGGAAC CAGAAGTGAA GATGATGAGG ATCAGGGCTG  
AGCCTGTGAG CACCACTCC ACCACTGACA CCAACACAG ATTAACAAAG CATCTTGTGG ACCCTGGGA TGGAAAGAAT  
AGTTGTGGC TTATCAACCT CCCCCACAGC CCACACAGAA AAGATAAAT CATCATGGCT ACAGTGTAC AGAAGATGAT  
GACCAAGGA GTAGGCTGC CTGAGTGAAT GCTGAGAGTG ATAATGGGAG CAGTAGCATC TCAGAGACTA CAGCAGAAAC  
CATCCACATA AAGAGCTTTG CCAAACTTA TGATAAAGG CACCTCAGA GACTCTCCCT ACTTTAATAT TAGCCATTG  
CAGAAATGGT GAGTGGAAAG AGAAATCTTA GGAAGAACCC CTTAAAAAG CAAAATGCTT TTAGGTTTG TGCTGAAGAG  
CCTGGAAGG AAATAAGGAC ACACACGCTG AGAAATCTT CTCCTGCCC AACACTGGGA TAATCTCAA GGATCTCTC  
ATATCTCATT CTCTGGATA CACTGTCCAC TCAGAAATAT TGTGCAGAGT GCAGTAATTC AAAAGTGAGC TATTGTGTTA  
GGAGTGAAGG CAAGAGTATC GTAAATAAAA TCAAATTTGA AATGAATTCT CTTAAATTGC TTTATAGATG TTTAATGTAA  
GCCAGCAGT ATTAACGAT AAACCTTAAA TTCGAGAAAA ACTTGGTCAT TCAGAACTA TAGAAACAGG CAGGACTTAT  
TGCAGGGCA AACACAGAGT GAGCTCCAGC TGCTTCAGG AAAATCTGCC AGTGCCATGA AGGATGTACT CTGTGCTC  
CACTGCACTA CTGCTCAGTA TGAGCCCCATG CCATCAGCTG TCCCTGACCC ACAGGAGTTC TTTAGAAAGAG ACTGGTCAAC  
AAAAGTTTCT AGGGTGTCTT ATACCTGCCA ACTCGAGGGT TAAACCAAGT TGCATAGAAA TGCTCAATCA AGAAAGACAC  
AGTCATTACT CAGAGAATAA TAAACAGCCT GGCAGCATAT GAATGAATAG AAAAAGATG TTACATGCAA AGCATGAAAT  
AACCAAAATC CATAACAGAT GTTAATCTGT AATGTGTTTA GGAGAATTA GAGGAAGTAT AAGATTTATT CTTTCATCAA  
AAAAATTATA GCCAATGAGG ATATATCTAT CAATTATCCA TCAAGTGGTG ATATGGCAGC ACAAGGTAAA ACACAAAGGA  
ATAAACCAA CGTTTATTAA GAACCAATCA TGTGGCATTT CACATTGAGC ATCATATTTA ATTCTGAAAA AAATCCTTGT  
ACTGTATCAT TCTTCATATT TTATGGATGC AGTAACTAAG GCTGAGAATC TAAAAATTT TCCTAAGTTT AGACACATAG  
CTAAGTGGCA GAACCAAGAT TCAAACTCAC CCCATCTAAC TGCAGAGCAA ACTGCATGCC TTAATGTCA AAGTGAATAC  
TAGCAGAGTT AATACAATGT TTGGAACTC AGAGAAGGAA TGATCCCTCT GCATTATAGT TACTAAGGAA TCATTGCCAT  
TATTTAAATG CCAGTGCTTC TACATCAGGC CCAAATTTTC TGTCTACTA ACTGTGAATC AAGACTTGAT TCAACCTCTA  
CTTGAGTATC TGCCGCAATG AGAAATCACT TACCTCCACT AACCACACAT TTATTTTATA ACAACAGATT GTTAGTAAGT  
CCTTTCTTAT ACATACTCAA CAGCTGCTTC CCAAGATGCT GTAGGATTAT GTCTAGAGTC AAATAGCCA GAAGCAATGT  
CCAAAATACA CCATAACACT GTGCAGCAA AGCTCTACTA CCATCTGTTT GGCCCAACA TCTAGGCAG CACTGGATAT  
CTGAATCATC AATTATTTCC ACAAACACTG ACCCTCTAC CAGTCACTT CACTAGAAGA ATTAATTCCA CATGATAATA  
GCTCCCTCAT GTTACTCCCT TCTAAGTCAA ATTGTACACC CTTTATCTG ATTAACAGAG TCTAAGTCAC ATGACCTAAA  
TGCAAGAGAA CTGGGAATGG ACGTTTGTGG ATTCTACCTT AGTAAGGCAA AGTTATCATT GGGAAATTCCT CTAATACAGG  
AAGGGTGTTC CAGAGACATT AAGGAGCCAT ATAAATGGAA AATGTCCACT ACAATCCATC ACTTGGTTGC CCCACATCAA  
CATTCATTCT TTTGCCACAC TTAAGTTTC CAAGAACAAA AATTATCCCA CTGAACATAA TCTTACTAT CTTTATATA  
AAGGAAATTT AGACTTGACT CAGCAGAACT GAAATAACCC AGCTCTAACA GTTACTGCTT TTAACCTCAA GTACTGTGTC  
TCTAGGTGAT ACCTGCTCCA ACAATAGTTT GGTACATTT TCAATTTGAT ATTCTTAGT CTCCCACTT GATAACTGTA

CCCTAAACCA TAAAGTTCAC TACCAACATG CTATATATAA AATAACCAAA GGGGGAAGAA GAAAGAGAAA AAGGAAATCT  
CTTAAATATC ACAGGTATAC ATATGACAAA GCAAAGAAGG AAATGTGAGC AGATAGTGCA GTCCTCGTTT CTGAAATTGG  
TCCCTGACT GGGGCTATAC CTATTCCATT TCCTCACCT CAGCCAGGCA GGTGGAGCAA AAACCTAAGT CTGGTGGAT  
CTGAATCTTG ATGCTGTGGA GCTGTCTTAC TAGCCCCAGA CTACCTGCCT CTCAATTTCT AATTATATCA GTGAAAGCAA  
ACAGCTTTGA TTTGTTTAA GCTCTGATT TTTGGTCTAA CTGATGTAAG ACCACAAGGA CAAGAGTTCT CCAGCTCCGG  
ATTCTCTTCT GTTCTGTAA TGGTGAAATG CCCGAGAGAA GAGTTGCCAA CTTTGCCAAA TAAAAATAC AGGTAACAAA  
TTAAATTCAA ATTTAGATAA ACAACAATTT TTTAGTATTA GTGTGTCCCA TTCAATATTT GGACATACTT AACTAAAAAA  
TGATTGTG TTCACTGAA ATACAAATTT AACTGGGCAT TCTGAATATT CTCTGGCAAC CCCCAGAGA GTGAAGAAAG  
TGGTACAAGG ACACCTAAGA AGACCAGATT TGAAGAGACA TTACGGATGT GTTTAAATGT CTTATTCTAG AGAGAGTTAG  
AGCTGTAGGT AGAACTTGGG AATTAAGTT AAAAGCAGAC ACAGAGACCT GGCCAATATA TACTAAGGAG TGGATCACTC  
TGGTCACAAG CCCAACCTGA GACCAAGGGC ATAGTGAGAT GATTTGGGAA AGGCATTAT ACATACTCA TCCCCGCTT  
TGAACATAAT GCCTTATAAA TCCTCAAGAG AAATGACAGT CCACCATGTG GACTGCTTC TGAAGTCCA GGGAAATAA  
AAGCTATGTG CTTGAAACCC ACTTCTGATA TTATAAGGTG TGTGATCTTT GTCATGTAA TGGGTCTGAG TATCAATTCT  
ACAATTGTAA AGTGACAGTA ATGGTGTGTC CCCAGGTTGT TGTGAAAGC TTGATTCTTA ATGCAACAGT AGGAAACCCC  
AGCCTCTCTG GAGCAACAC CTTTCTACAT CTTTACTTCC CCTGCACATT GGCAGGACTC TATTCTCTA TTTCTCTCTA  
GTGCTAGAGC AGAAAGGGAC CTTGATTGTA TATCAGGAAA ATCTATTTCT GAACATAAG CTATGATAGC TGATTTAAAA  
AATTGACTAT CATGACATGA TAATGATCAT AATGGTAATA CATATTGATA GGGTTGCCGT GAAAGTAATA ATATATCTAA  
GAGTTGTGAC AATATATGAT ACGCTAGAC TCTCAGAAAA TGCTAATTC AATCCCAATT GCTCTTGTCA TAAAGTTCTG  
TCCTAGGGTC GTTCTTTTC CCACATCTAC CCTCCTTGA TCTCTCTCT GTCTTTTCA TGTGTTTCA AGGAGGAGAG  
AGATCCAGGT CAATGTTTT CAAATTACAA GGAATTATCA TTAAATGGG GAAGAAGCTC AAGTTTTGAC GTGTAGTGGG  
ATTGGAGTGG AGTGGAGTGG AATGGAAACT AACAGGAAGA CACTGCACAT GGTAAAGATA AAGATTGTTT CCTGAAACCT  
TTAATTTGTG CTTACATACT CACACATACA TATGTGCATG CACTGGGACT CTGCAATATG CATTCTGAC TATGGAACAT  
AGCCATAAAA GCTTTGCACT TGAACGTTCA GTGGCCCTT CACAAGCTGC CTAATTGGG AAAGAAAAAC ATGGTCCCTC  
CATTCTCTGC CCCCACTCC AGAAAAGTCA CCATAGTTGA GGGTACATCT GAGAAGCCAG CACTTGGGAG TTAGGGGCTC  
AAGTTCCTTT CTAGAAAAAC ACTGGGTGAT TCTAGGGGAA CTTCCGATCA GAAACAGCCA ATTCAGAGTG AGAGAAGAAA  
ACGTGACCAT GCAGTCTCTG TGGTACCAG CCTTGGCCCT CTCTGCTT CTGGGAGTTA TAAACCCAA GACTGGAAG  
GAAACACAGC ATTTGCTCAG GCAGCCTCTC TGGGAAGATG CTGCTTCTC CTCTCCCCCT GCTGCTCTT CTCTGTGCT  
CCAGAGCTGA AGCTGGTGAG TATCAGGGT CTCCCTETG AAATCTGCAG TATCAGCTCC TGAACAAAAG ATGTTTAGTC  
TGAATAGCT GACTCTAAA CAGGGTTCCA AGATCTCTCT TCAAGAGTCC CACAGAGGAA ATTTCCACTT GGGATGTGTG  
CCACCCACC CCCACCCCA CCCACTGCA TTCTCTACAG CACTAGGAC CCCAGGAAC AAGGAATTC ACCTCAATTG  
TAGAAAAGCC CAGAGCAAGT GGAAGGAAAA GGGGTATCCC CAGGAAAAACA GACATGCTCT CTTAATCTTC TGAGCATAG  
GGTACCCAT TACTTTGTGA CTTTCTCACT CTGTGACCAT GCTCAAGAGC TATGGAGAAA TCTAAACAG GAACCTGGAC  
AGTGGTCTCT ACACAGAGAC AGAGGAGAGT GGGCCAGGGC AAGGTGGGAG TGGGAGAAGT CTGAGATGAA  
AACATCAGAA TGGAGCAGAG GCAAGAATGA GATTTCACT GGGAGGTAT GGGTGGGGA AGATACGAAA TACAGGAGAC  
AGGAGAGGGA AGATGGGCGG AACACAGGGT GAGAATGAGA TTCCAGGGAA GCCTAGCTCA GCTTAAACCC AATTTGTCCA  
TTATTGGAG AGAGTATCTA TGGCCGTGT CAAACCTGG GGTGCTCTGT TCCAGGGGAG ATCATCGGG GCACAGAATG  
CAAGCCACAT TCCCGCCCT ACATGGCTA CTTGGAATTT GTAACCTCCA ACGGTCCCTC AAAATTTGT GTGGTTTCC  
TTATAAGAGC GAACTTTGTG CTGACGGCTG CTCATTGTGC AGGAAGGTGA GACAACAGGG TCTATTATC TCCAAATGGG  
AGATGAACAA CCAGAGTAGC ATCCAGGAAT ACACCTGCAC TGGGGACTGA AGAGGGGGTC CTGGGTCTTG TCAACTTTCA  
GGAGAGGGAA GACTTTGGGC TGAAGACTT TAGTCTGTG TTGAATAGT CTTGAGCCT CAGTCACTGA GCTAAGCTCC  
CTTCGGAGGA AAAGGAGGTG CTGTCCGAAG GTCCCTCTG TTGCAGTAG ACCCTCACC CCTACCCAAC TCAAGACACA  
CGGCTCACTT TTCAGGGCCC CACCACTCT CAGGGCCACT TCCTATGAG CTTTTCAG AACACTGGCT CTAGTTCTCA  
GGGTCTGAA CCCATCATTT TATGGGAGCA GAGAACAGGT CTACATAAGA CCCCCACTTT CCGTTTAA CTGATATCTC  
CTGCTCAGG GGCTGGCCCT CATGCAGGT TCCCTGAAT AGGAAGTGTG AACCTGTCC CTTAGTCTC CCCTGGCTG  
TTAGTCCCC AGCAATTTCA GGGGTCTGAG AAATTGTGTC TGTTCCTGA GAAAGCTCTT TCATGAGTTA AGCCTGAGCC  
CTCAATGCC ACAAGTGGCC CATGAAAAGG GAGATGGTA GAGTCCGGCN ACCCAGTGAC AGAGTTTAGT CCTTTTTCT  
CAGAATGAGC TCACCTCAGA AGAAACCCCA AGCCATCACT GTCGCTCTCT TTTCTTCTCT TCTTCTCAC AGCAGGTCTA  
TAACAGTAC CTTTGGAGCC CATAACATAA CAGAGGAAGA AGACACATGG CAGAAGCTTG AGGTTATAAA GCAATTCCTG  
CATCCAAAT ATAACACTTC TACTCTTAC CACGATATCA TGTACTATAA GGTGACAACA CTTCTCTCT CCTTTCCAC  
TTCCATTCT CTAAGCTTC TCCTCAGGT CCTCATTGCC CTGAATTTT CTTAGGACTT GGCTATAACA TGAAGCTACT  
CACCTGTCC CTCCCTGATC ACCTCCAAT GTCCAGAGCC CATTTCGAGG ACTGACAGTC CTTATTCCC TTCACAGTTG  
AAGGAGAAAG CCAGCTGAC CTTGGCTGTG GGGACACTCC CTTCCCATC ACAATTCAAC TTTGTCCAC CTGGGAGAAT  
GTGCCGGGTG GCTGGCTGGG GAAGAACAGG TGTGTTGAAG CCGGGCTCAG AACTCTGCA AGAGGTGAAG CTGAGACTCA  
TGGATCCCCA GGCCTGCAGC CACTTCAGAG ACTTGTACCA CAATCTTCAG CTGTGTGTG GCAATCCCCA GAAGACAAAA  
TCTGCATTTA AGGTGATCT CCAACTAGGT TTCTCTCCA AACTCACTG TTCAGGGACC TGAATGCTCT TAGAAGGAGA  
TGGGGTCAGC AGGTGTGAG TCAGGTGACA GGGTGAGCAT CACAGGAATT GCTGTCTCTC CGTGTCTCAA GACAGCTCT  
GACCATCCAT TCCAGTCTAC TGACTGGGG GCATGGGGTG ACTGTGGAGA ATGTGGATGA CGGTCCCAAG AAAGGAAGAA  
GGGGCATCAG AACTAGATGT ATAAGTAGAG AGTCCACCT CTTGGGTCTG ACTTTAGGTC TACTGTGAC TCCAAGCTGG  
CTGGCAGACA GGAGTGGAGG ACTTCCCGGG CTCACCTTCT TCTCTCTCT CTCCCCCTAC AGGGAGACTC TGGGGGCCCT  
CTTCTGTGTG CTGGGGTGGC CCAGGGCATC GTATCTATG GACGGTCGGA TGCAAGGCC CTTGCTGTCT TCACCCGAAT  
CTCCATTAC CGGCCCTGGA TCAACCAGAT CCTGCAGGCA AATTAATCTT GATCCTGAG CCAGCTGAA GGAAGCTGG  
AACTGGACCT TAGCAGCAAA GTGTGTGCAA CTCATTCTGG TTCTACCTT GGTCTCTCA GCCACAACC TAAGCTCCA  
AGAGGTCTCC TACAGGTAAC AGAACTTCA ATAACTTCA GTGAAGACAC AGCTTCTAGT CGTGAGTGTG TGTCCCTCTC  
TGCTGCTCTC TTTCTCTGCA CATGTGACCT GATTCACAG CCAAGCACA AGGA-3' (FRAG. NO:) (SEQ. ID NO:2467)  
5'-GGBGCBBCBG-3' (FRAG. NO:1888) (SEQ. ID NO:1899)  
5'-GGBGCBGC-3' (FRAG. NO:1889) (SEQ. ID NO:1900)  
5'-GGGGCBGG CG-3' (FRAG. NO:1890) (SEQ. ID NO:1901)  
5'-CGTTTTCTTCTCTC-3' (FRAG. NO:1369)(SEQ. ID NO:1379)  
5'-GCTGGTTTTCTTTCC-3' (FRAG. NO:1370)(SEQ. ID NO:1380)

5'-TGGCAGTGGGTGGGGTGGGGTGGGGTGGC-3' (FRAG. NO:1371)(SEQ. ID NO:1381)  
5'-TTCCTTGTTCTGGGGGTGTCCT-3' (FRAG. NO:1372)(SEQ. ID NO:1382)  
5'-CTTGCTCTGGGCTTTTCT-3' (FRAG. NO:1373)(SEQ. ID NO:1383)  
5'-CCCCCTTTCTTCC-3' (FRAG. NO:1374)(SEQ. ID NO:1384)  
5'-TGCTGTGTTTCTGGGG-3' (FRAG. NO:1375)(SEQ. ID NO:1385)  
5'-CTCTCTCTGTCTCTGTGT-3' (FRAG. NO:1376)(SEQ. ID NO:1386)  
5'-CCTTGCCCTGGCCC-3' (FRAG. NO:1377)(SEQ. ID NO:1387)  
5'-TCTTCCCTCTCTGTCTCTGT-3' (FRAG. NO:1378)(SEQ. ID NO:1388)  
5'-CCCTGTGTTCCGCCC-3' (FRAG. NO:1379)(SEQ. ID NO:1389)  
5'-GTCTTCCCTCTCTG-3' (FRAG. NO:1380)(SEQ. ID NO:1390)  
5'-ACCTCCTTTCTCCG-3' (FRAG. NO:1381)(SEQ. ID NO:1391)  
5'-CTGGGTGGGGCCCTG-3' (FRAG. NO:1382)(SEQ. ID NO:1392)  
5'-CCTGTTCTCTGCTCCC-3' (FRAG. NO:1383)(SEQ. ID NO:1393)  
5'-TGGCTTGGGGTTTCTTCTG-3' (FRAG. NO:1384)(SEQ. ID NO:1394)  
5'-TGTGTCTTCTCTCTGT-3' (FRAG. NO:1385)(SEQ. ID NO:1395)  
5'-GGCTGGCTTTCTCTTC-3' (FRAG. NO:1386)(SEQ. ID NO:1396)  
5'-TTTTGTCTTCTGGG-3' (FRAG. NO:1387)(SEQ. ID NO:1397)  
5'-TGCCCCCTTCTCTTTCTGGG-3' (FRAG. NO:1388)(SEQ. ID NO:1398)  
5'-TCCTTGGTGCTTGGGCTGGG-3' (FRAG. NO:1389)(SEQ. ID NO:1399)  
5'-GGBGCTGCTB CTGCBGATT CBGBGGBBG BBCCCTGCTB CTBCCBGCT TCBGCTCTGG BGCBCBBGBG BBBGBGCBGC  
BGGGGGBGBG GBBGBBGBG CBTCTCCB GBGBGGCTGC CTGBGCBBT GCTGGTTTC CTTCBGTG TTGGGTTTT  
TBBCTCCBG BBGGCBGBG BGGGCBGG-3' (FRAG. NO:1891) (SEQ. ID NO:1902)

**Endothelial Nitric Oxide Synthase Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-GCGTCTTGGG GTGCBGGGCC CBTCTGCTG CGCCTGGGCG CTGCTGTGCG TCCGTCTGCT GGGGGGCCGG GGTGGCTGGG  
CCCTGCTTGC CGCAGCACCC CGGGCCGACC CGAGGCTCGG GGGGCTGTGT TCTGGCGCTG GTGGGCTTGG GCCCTCTGG  
GGGCTGGGT TCTGCTGCG CTTGGGCGCT GCGCTTCTGG GGTGCGGGGC CGGGGGGCCG GGGGGCCGCT GTTCGTGGGC  
CTGGGGGTGC CTGTGGCTGC CGGTTGCCCC GGTTGGTGGC GCCGTCTGTC TGCCGGTCTG TGGCTGGGTC CCCCCGCCG  
TTTCTGGGG TCCGCGTGGG GTGCTCCGGT TCTCTGCTGC GCTGCTGCT TGTCTTCCG GCCGTGGCGG CGTGCTGGTC  
CGCCCCCTT GGCCTTCTGC TCGGGGTCTG GCTGGTTGCC GGTGCCCTTG GCGGCGGTCT TCTTCTGGT GGCTCTGGGC  
CCGGCCGTC TCGGGCGTCT CGTGTCTGCT CTGTGCTGT TCCGGCCGCT CCTTCTCTT CCGCCGCGC CGTCCCCGC  
CCGCTCGTCG CCCTGGCCCG GCCTCTCTT GCGCGCTGTC TCGGGCGGCG GCCTTGGCGC TCCGTTTGGG GCTGCCTCTG  
GCGCTTCCG CCCTCGGCT GGGCGCTCTC TTCCGCTGT GCTGGTGGCC CTCGTGGGCC CCTCTGGCC TCCGGTGTCC  
TGTGGTCCC CGGTGGTGG CCGGGCCGCT TGGGCGGGCG TGGGCGCCG GGGGCTCTCT GGGTGGCTCT TCTCCGCGG  
GGGTCCGCG CTCTGCTGT TCCGTGGCT CTCTGCTCT TCTCTGGGT GGGTGTGGG TGCCGGGGTC TCCGGGCTTG  
CCCCGCGCTG CTGGGCGTTC TCGGCTCTG GGGTGTCTG TGGCCCCGCT CGTGTGCCCC TCCGTGCCCC GTCGCGGGC  
TCGTCCCCC CTGGGTGCG GCGGGGCTGG TCTGGCGTT TTGCTCTTC CTGGGCGTCT TGGGTGCBG GGGCCBTCT  
GCTGCGCTG GCGGCTGCTG TCGTCCGTC TGCTGGGGG CCGGGGTGGC TGGGCCCTGC TTGCCGACG ACCCGGGGC  
GACCCGAGG TCGGGGGGCT GTTCTTGGC GCTGGTGGGCT TTGGGCCCC CTGGGGGCTG GGTTCCTGCT TCGCCTGGG  
CGCTGGGCT TTGGGGTGG GGGCCGGGG GCGGGGGGG CGCTGTTCGT GGGCCTGGG GTGCTGTGG CTGCCGTTG  
CCCCGTTG TGGCGCGTC CTGCTGCCG TCGTTGGCTG GTTCCGCG CCGTTTCTT GGGGTCCGCG TGGGTGCTC  
CGGTCTCTG TGCCGCTGCT GCCTGTCTT TCCGGCGTG GCGGCGTGGT GGTCCGCCCC CCTGGCCTT CTGCTCGGG  
TCTGGCTGGT TGCCGGTGCC CTGGCGGGC GTCTTCTTC TGGTGGCTCT GGGCCCGGCC GGTCTCGGG GTCTCGTGT  
CGCTCTGTG CTGTCCGGC CGCTCTTCC TCTCCGCG CCGCCGCTC CCGCCGCTC GTCGCTGG CCGGCGCTC  
TCTGGCCG TGTCTCGGG GCGGCGCTG GCGTCCGTT TGGGGCTGCC TCTGGCGCT CCGGCCCTC GCCTGGGCG  
TCTCTCCG CTGTGCTGGT GGCCTCTGT GGCCTCTCT GGCCTCCGT GTCCTGTGG CCCCCGGCT GTGGCGGGC  
CGGTGGGGC GCGTGGGGC CCGGCGGGT CCGGCGGGT CCGTCTCCG CCGGGGGTCC CCGGCTCTG CTGTCTCTG  
GGCTCTCTG CTTCTCTCT GGGTGGGTG TGGGTGCCG GGTCTCCGG CTGCCCCG GCTGTGGGC GTTCTCGGT  
CTTGGGGTTG TCTGTGGCC CGCTCGTGT GGCCTCCG GCGGCTGCC GGCCTCGTCC CCTCTGGT GCGCGGCGG  
CTGTCTCTG CGTTTGTCT CTCTCTG-3' (FRAG. NO:1892) (SEQ. ID NO: 1903)  
5'-GCGGGGCCG-3' (FRAG. NO:1893) (SEQ. ID NO: 1904)  
5'-CGGGGGGC-3' (FRAG. NO:1894) (SEQ. ID NO: 1905)  
5'-GCGCGGGGGC-3' (FRAG. NO:1895) (SEQ. ID NO: 1906)  
5'-CTGTGCGTCCGTCTGCTGG (FRAG. NO:1390)(SEQ. ID NO:1400)  
GGGGCCGGGTGGCTGGGCCCTGCTGCCG (FRAG. NO:1391)(SEQ. ID NO:1401)  
ACGACCCCGGGCCGACCCGAG (FRAG. NO:1392)(SEQ. ID NO:1402)  
GCTCGGGGGGTGTGTTCTGGCGCTGGTGGG (FRAG. NO:1393)(SEQ. ID NO:1403)  
CTTGGGCCCTCTGGGGGCTGGGTT (FRAG. NO:1394)(SEQ. ID NO:1404)  
TCCTGCTGCGCTGGGCGCTG (FRAG. NO:1395)(SEQ. ID NO:1405)  
GCGCTTGGGGTGC (FRAG. NO:1396)(SEQ. ID NO:1406)  
GGGGCCGGGGGCGGGGG (FRAG. NO:1397)(SEQ. ID NO:1407)  
GCCGCTGTTCTGGGCTGGG (FRAG. NO:1398)(SEQ. ID NO:1408)  
GGTGCTGTGGCTGCC (FRAG. NO:1399)(SEQ. ID NO:1409)  
GGTTGCCCGGTTGGTGGC (FRAG. NO:1400)(SEQ. ID NO:1410)  
GCCGCTGCTGCCGTT (FRAG. NO:1401)(SEQ. ID NO:1411)  
CGTTGGCTGGGTCCCCCGC (FRAG. NO:1402)(SEQ. ID NO:1412)  
CCGTTTCTGGGGTCC (FRAG. NO:1403)(SEQ. ID NO:1413)  
GCGTGGGGTGTCC (FRAG. NO:1404)(SEQ. ID NO:1414)  
GGTCTCTGTGCCG (FRAG. NO:1405)(SEQ. ID NO:1415)  
CTGCTGCTTGTCTTCC (FRAG. NO:1406)(SEQ. ID NO:1416)



GGCCGTGGCGGCGTGGTGGTCC (FRAG. NO:1407)(SEQ. ID NO:1417)  
GCCCCCCTGGCCTTCTGCTC (FRAG. NO:1408)(SEQ. ID NO:1418)  
GGGGTCTGGCTGGT (FRAG. NO:1409)(SEQ. ID NO:1419)  
TGCCGGTGCCCTTGGCGGC (FRAG. NO:1410)(SEQ. ID NO:1420)  
GGTCTTCTCTCTGGTG (FRAG. NO:1411)(SEQ. ID NO:1421)  
GCTCTGGGCCCGGCCGGTCTCGG (FRAG. NO:1412)(SEQ. ID NO:1422)  
GCGTCTCGTGTTCG (FRAG. NO:1413)(SEQ. ID NO:1423)  
CTCTTGCTGTTCGGGCCG (FRAG. NO:1414)(SEQ. ID NO:1424)  
CTCCTTCTCTTCCGCCGCC (FRAG. NO:1415)(SEQ. ID NO:1425)  
GCCGCTCCCCGCC (FRAG. NO:1416)(SEQ. ID NO:1426)  
GCTCGTCGCCCTGGCCC (FRAG. NO:1417)(SEQ. ID NO:1427)  
GGCCTCTCTGGCCGC (FRAG. NO:1418)(SEQ. ID NO:1428)  
TGTCTCGGGCGGCGCCTTGGC (FRAG. NO:1419)(SEQ. ID NO:1429)  
GCTCCGTTTGGGGCTG (FRAG. NO:1420)(SEQ. ID NO:1430)  
CCTCTGGCGCTTCC (FRAG. NO:1421)(SEQ. ID NO:1431)  
GGCCCTCGGCTGGGCGCTC (FRAG. NO:1422)(SEQ. ID NO:1432)  
TCTTCCGCTGTGC (FRAG. NO:1423)(SEQ. ID NO:1433)  
TGGTGGCCTCGTGG (FRAG. NO:1424)(SEQ. ID NO:1434)  
GCCCCTCTGGCCTCCGGTGTCC (FRAG. NO:1425)(SEQ. ID NO:1435)  
TGTGGTCCCCGGCTGGT (FRAG. NO:1426)(SEQ. ID NO:1436)  
GGCCGGGCCGTTGGGCGGGC (FRAG. NO:1427)(SEQ. ID NO:1437)  
GTGGGCGCGGCGGGTCTCC (FRAG. NO:1428)(SEQ. ID NO:1438)  
GGGCTGCCCTTCTCC (FRAG. NO:1429)(SEQ. ID NO:1439)  
GCCGGGGTCCCCG (FRAG. NO:1430)(SEQ. ID NO:1440)  
GCTCCTGCTGTTCCTGGGCTTCTGCC (FRAG. NO:1431)(SEQ. ID NO:1441)  
TCTCTCTGGGTGGGTGCTGGGTGCCG (FRAG. NO:1432)(SEQ. ID NO:1442)  
GGGTCTCGGGCTTG (FRAG. NO:1433)(SEQ. ID NO:1443)  
CCCCGCGCTGCTGGGCGTTCTGC (FRAG. NO:1434)(SEQ. ID NO:1444)  
GGTCTTGGGGTTGTC (FRAG. NO:1435)(SEQ. ID NO:1445)  
TGTGGCCCCGCTCG (FRAG. NO:1436)(SEQ. ID NO:1446)  
TGTCGCCCTCCGTCGCC (FRAG. NO:1437)(SEQ. ID NO:1447)  
CGTCGCCGCGCTCGTCC (FRAG. NO:1438)(SEQ. ID NO:1448)  
CCTCCTGGGTGCGC (FRAG. NO:1439)(SEQ. ID NO:1449)  
GGCGGGCTGGTCTCT (FRAG. NO:1440)(SEQ. ID NO:1450)  
GGCGTTTGTCTCTCTCTGG (FRAG. NO:1441)(SEQ. ID NO:1451)  
5'-CGCTCTTGGGTGCBGGGCCBCTCCTGCTGCGCCTGGGCGCTG-3' (FRAG. NO:1896) (SEQ. ID NO: 1907)

**Inducible Nitric Oxide Synthase Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-CTGCCCCBGT TTTTGTCTCT CBCBTGCCGT GGGGBGBBGB BTGGCTGCCT CCCCAGGGTT TCTGCTGCTT GCTGCTCTCT  
TCCCCTCTCC CTCTTTTCCC GTCTCTTTT TGCCTCTTG GGTCTCTGT GTTCTGGCC TGCTTGGTGG CGGCTTGTGC  
GTTCTCTCTC TCTTCTCTTG GGTCTCCGCT TCTCGTCTG CCTTTTCTG TCTCTGTGC GCCGTTCTCT CTCCGGCGTC  
CTCCTGCCCT GTGCTGTTG CTTGGGTGG TCGGGTCCC GGTGCTCCCC CGGCGGGCCG GCTGGTGGCC TGGGCTGTG  
TGGTGGGGTG TGGGCGCGCT GGGTTGGGG TGTGGTGGG TCTTCTGTG CTTGTGGGG TGTGGTGTG TCTGTGGGG  
TGTGCTGGT CTTGGGGCTT CCTCCCTGT GCTGGGTGCG GCCTCCCCG CCCCCTCTG GCGCGGTGGC CTGGCTCCT  
GTGGGCGCTT CTGGCTCTG CCCTGTCTT CTTCGCTCG TGGCTGCTG GCTGC CATATGTATG GGAATACTGT  
ATTTCAGGCA TTATAAGGAA TGAAATTATA GGCCGGGCAT TGTGGCTAAC CCTTGTAAATC CTAGCACTTT  
GAGAGGCTGA AGTGGGCAGA TCACTTGAGC TTCAGAGTTC GAGACCAGCA TGGACAACAT GGTGAAACCC  
AGTCTCTACC AAAAACACAA AAATATTAGC TGGGTGTGGT GGTGCATGCC TGTAGTCCCA GCTACTCAGG  
AGGCTGAGGT GGGAGGATCG CTTGAGCCTG GGAGGCAGAA GTTGCAATGA GCAGAGATCG TGCCACTCCG  
CTCCAGTCTT GGTGACAGAA TGAGACTCCA TCTCAAAAAT AAATAAATAA ATAAATAAAA TAAATGAAAT  
GAAATTATTA GAAATTACCA CTTTTTCATG TAAGAAGTGA TCATTTCCAT TATAAGGGAA GGAATTTAAT  
CCTACCTGCC ATTCCACCAA AGCTTACCTA GTGCTAAAGG ATGAGGTGTT AGTAAGACCA ACATCTCAGA  
GGCCTCTCTG TGCCAATAGC CTTCTTCTT TTTCCCTTCCA AAAACCTCAA GTGACTAGTT CAGAGGCCTG  
TCTGGAATAA TGGCATCATC TAATATCACT GGCCTTCTGG AACCTGGGCA TTTTCCAGTG TGTTCATAC  
TGTCATATAT CCCCCAGCTT CCTGGACTCC TGTCACAAGC TGGAAAAGTG AGAGGATGGA CAGGGATTAA  
CCAGAGAGCT CCCTGCTGAG GAAAAAATCT CCCAGATGCT GAAAGTGAGG CCATGTGGCT TGGCCAAATA  
AAACCTGGCT CCGTGGTGCC TCTGTCTTAG CAGCCACCCT GCTGATGAAC TGCCACCTTG GACTTGGGAC  
CAGAAAGAGG TGGGTGGGT GAAGAGGCAC CACACAGAGT GATGTAACAG CAAGATCAGG TCACCCACAG  
GCCCTGGCAG TCACAGTCAT AAATTAGCTA ACTGTACACA AGCTGGGGAC ACTCCCTTTG GAAACCAAAA  
AAAAAAGAGA CTTTATGCA AAAACAATC TCTGGATGGC ATGGGGTGAG TATAAATACT  
TCTTGGCTGC CAGTGTGTTT ATAACCTTGT AGCGAGTCGA AAAGTGGGC TCCGGCCGCA GAGAACTCAG  
CCTCATCTCT GCTTTAAAT CTCTCGGCCA CCTTTGATGA GGGGACTGGG CAGTTCTAGA CAGTCCCGAA  
GTTCTCAAGG CACAGTCTC TTCTGGTTT GACTGTCTT ACCCGGGGA GGCAGTGCAG CCAGTGCAA  
GGTGAGTTGC C CATATGTATG GGAATACTGT ATTTCAGGCA TTATAAGGAA TGAAATTATA GGCCGGGCAT  
TGTGGCTAAC CCTTGTAAAT CTAGCACTTT GAGAGGCTGA AGTGGGCAGA TCACTTGAGC TTCAGAGTTC  
GAGACCAGCA TGGACAACAT GGTGAAACCC AGTCTCTACC AAAAACACAA AAATATTAGC TGGGTGTGGT  
GGTGCATGCC TGTAGTCCCA GCTACTCAGG AGGCTGAGGT GGGAGGATCG CTTGAGCCTG GGAGGCAGAA  
GTTGCAATGA GCAGAGATCG TGCCACTCCG CTCCAGTCTT GGTGACAGAA TGAGACTCCA TCTCAAAAAT  
AAATAAATAA ATAAATAAAA TAAATGAAAT GAAATTATAA GAAATTACCA CTTTTTCATG TAAGAAGTGA  
TCATTTCCAT TATAAGGAA GGAATTTAAT CCTACCTGCC ATTCCACCAA AGCTTACCTA GTGCTAAAGG

ATGAGGTGTT AGTAAGACCA ACATCTCAGA GGCCTCTCTG TGCCAATAGC CTTCTTCTCT TTTCTTCTCA  
AAAACCTCAA GTGACTAGTT CAGAGGCCTG TCTGGAATAA TGGCATCATC TAATATCACT GGCCTTCTG  
AACCTGGGCA TTTTCCAGTG TGTTCATAC TGTCAATATT CCCCCAGCTT CCTGGACTCC TGTCAACAAGC  
TGGAAAAGTG AGAGGATGGA CAGGGATTA CCAGAGAGCT CCCTGCTGAG GAAAAAATCT CCCAGATGCT  
GAAAGTGAGG CCATGTGGCT TGGCCAAATA AAACCTGGCT CCGTGGTGCC TCTGTCTTAG CAGCCACCCT  
GCTGATGAAC TGCCACCTTG GACTTGGGAC CAGAAAAGAG TGGGTTGGGT GAAGAGGCGAC CACACAGAGT  
GATGTAACAG CAAGATCAGG TCACCCACAG GCCCTGGCAG TCACAGTCAT AAATTAGCTA ACTGTACACA  
AGCTGGGGAC ACTCCCTTTG GAAACCAAAA AAAAAAAGAGA CCTTTATGCA AAAACAACCTC  
TCTGGATGGC ATGGGGTGAG TATAAATACT TCTTGGCTGC CAGTGTGTTT ATAACCTTGT AGCGAGTCTGA  
AAACTGAGGC TCCGGCCGCA GAGAACTCAG CCTCATCTCT GCTTTAAAT CTCTCGGCCA CCTTTGATGA  
GGGGACTGGG CAGTTCTAGA CAGTCCCGAA GTTCTCAAGG CACAGGTCTC TTCTGTGTTT GACTGTCTCT  
ACCCCGGGGA GGCAGTGCAG CCAGCTGCAA GGTGAGTTGC C-3' (FRAG. NO: ) (SEQ. ID NO: 2506)

5'-CTGCTTTAAA ATCTCTCGGC CACCTTTGAT GAGGGGACTG GGCAGTTCTA GACAGTCCCG AAGTTCTCAA GGCACAGGTC  
TCTTCTGGT TTGACTGTCC TTACCCCGGG GAGGCAGTGC AGCCAGCTGC AAGCCCCACA GTGAAGAACA TCTGAGCTCA  
AATCCAGATA AGTGACATAA GTGACCTGCT TTGTAAAGCC ATAGAGATGG CCTGTCTCTG GAAATTTCTG TTCAAGACCA  
AATTCCACCA GTATGCAATG AATGGGGAAA AAGACATCAA CAACAATGTG GAGAAAGCCC CCTGTGCCAC CTCCAGTCCA  
GTGACACAGG ATGACCTTCA GTATCACAAC CTCAGCAAGC AGCAGAATGA GTCCCCGCAG CCCCTCGTGG AGACGGGAAA  
GAAGTCTCCA GAATCTCTGG TCAAGCTGGA TGCAACCCCA TTGTCTCTCC CACGGCATGT GAGGATCAAA AACTGGGGCA  
GCGGGATGAC TTTCCAAGAC ACACCTTACC ATAAGGCCAA AGGGATTTTA ACTTGCAGGT CCAAACTCTTG CCTGGGGTCC  
ATTATGACTC CCAAAAGTTT GACCAGAGGA CCCAGGGACA AGCCTACCCC TCCAGATGAG CTCTACCTC AAGCTATCGA  
ATTTGTCAAC CAATATTACG GCTCCTTCAA AGAGGCCAAA ATAGAGGAAC ATCTGGCCAG GGTGGAAGCG GTAACAAAGG  
AGATAGAAAC AACAGGAACC TACCAACTGA CGGGAGATGA GCTCATCTTC GCCACCAAGC AGGCTGGGCG CAATGCCCA  
CGCTGCATTG GGAGGATCCA GTGGTCCAAC CTGCAAGTCT TCGATGCCCG CAGCTGTTC ACTGCCCGGG AAATGTTTGA  
ACACATCTGC AGACAGTGC GTTACTCCAC CAACAATGTC AACATCAGGT CGGCCATCAG CGTGTTCTCC CAGCGGAGTG  
ATGGCAAGCA CGACTTCCGG GTGTGGAATG CTGAGCTCAT CCGCTATGCT GGCTACCAGA TCCGATAGTG CAGCATCAGA  
GGGGACCTCG CCAACGTGGA ATTCACTCAG CTGTGCATCG ACCTGGGCTG GAAGCCCAAG TACGGCCGCT TCGATGTGGT  
CCCCCTGGT CTGACGGCCA ATGGCCGTGA CCCTGAGCTC TTCGAAATCC CACCTGACCT TGTGCTTGAG GTGGCCATGG  
AACATCCAA ATACGAGTGG TTTCCGGAAC TGGAGCTAAA GTGGTACGCC CTGCCTGCAG TGGCCAACAT GCTGCTTGAG  
GTGGGCGGCC TGGAGTTCCC AGGGTGCCCC TTCAATGGCT GGTACATGGG CACAGAGATC GGAGTCCGGG ACTTCTGTGA  
CGTCCAGCGC TACAACATCC TGGAGGAAGT GGGCAGGAGA ATGGCCCTGG AAACGCACAA CTGGCCCTCG CTCTGGAAG  
ACCAGGCTGT CGTTGAGATC AACATTGCTG TATCCATAG TTTTCAGAAG CAGAATGTGA CCATCATGGA CCACACTCG  
GCTGCAGAA CTTCATGAA GTACATGCAG AATGAATACC GGTCCCGTGG GGGCTGCCCG GCAGACTGGA TTTGGCTGGT  
CCCTCCCATG TCTGGGAGCA TCACCCCGT GTTTCACCAG GAGATGCTGA ACTACGTCT GTCCCTTTC TACTACTATC  
AGGTAGAGGC CTGGAACACC CATGTCTGGC AGGACGAGAA GCGGAGACCC AAGAGAAGAG AGATTCCATT GAAAGTCTTG  
GTCAAAGCTG TGCTCTTTC CTGTATGCTG ATGCGCAAGA CAATGGCGTC CCGAGTCAGA GTCACCATCC TCTTTGCGAC  
AGAGACAGGA AAATCAGAGG CGCTGGCCTG GGACCTGGGG GCCTTATTC GCTGTGCCTT CAACCCCAAG GTTGCTGCA  
TGGATAAGTA CAGGCTGAGC TGCCTGGAGG AGGAACGGCT GCTGTGCTG GTGACCAAG CGTTTGCTG TGGAGATGC  
CCTGGCAATG GAGAGAACT GAAGAAATCG CTCTTCATGC TGAAAGAGCT CAACAACAAA TTCAGGTACG CTGTGTTTGG  
CCTCGGCTCC AGCATGTACC CTCGGTCTG CGCCTTGTCT CATGACATTG ATCAGAAGCT GTCCACCTG GGGGCTCTC  
AGCTACCCC GATGGGAGAA GGGGATGAGC TCAGTGGGCA GGAGGACGCC TTCCGCAGCT GGGCCGTGCA AACCTTCAAG  
GCAGCCTGTG AGACGTTTGA TGTCCGAGGC AAACAGCACA TTCAGATCCC CAAGCTCTAC ACCTCCAATG TGACCTGGGA  
CCCGCACCA TACAGGCTCG TGCAGGACTC ACAGCCTTG GACCTCAGCA AAGCCCTCAG CAGCATGCAT GCCAAGAAGC  
TGTTACCAT GAGGCTCAA TCTCGGCAGA ATCTACAAAG TCCGATACCC AGCCGTGCCA CCATCCTGGT GGAACCTCC  
TGTGAGATG CGCAAGGCCT GAACTACCTG CCGGGGAGGC ACCTTGGGGT TTGCCAGGC AACCAGCCGG CCTGTGTCCA  
AGGCATCTG GAGCGAGTGG TGGATGGCCC CACACCCAC CAGACAGTGC GCCTGGAGGA CCTGGATGAG AGTGGCAGCT  
ACTGGGTGAG TGACAAGAGG CTGCCCCCT GCTCACTCAG CCAGGCCCTC ACCTACTCCC CGGACATCAC CACACCCCA  
ACCCAGCTGC TGCTCCAAA GCTGGCCAG GTGGCCACAG AAGAGCTGA GAGACAGAGG CTGGAGGCC TGTGCCAGCC  
CTCAGAGTAC AGCAAGTGA AGTTACCAA CAGCCCCACA TTCTGGAGG TGCTAGAGGA GTTCCCGTCC CTGCGGGTGT  
CTGTGGCTT CCTGCTTTC CAGTCCCCA TTCTGAAGCC CAGGTTCTAT TCCATCAGCT CCTCCGGGA TCACAGCCC  
ACGGAGATCC ACCTGACTGT GGCCGTGGTC ACCTACCACA CCGGAGATGG CCAGGGTCCC CTGCACACG GTGTCTGCAG  
CACATGGCTC AACAGCCTGA AGCCCCAAGA CCCAGTGCCC TGCTTTGTGC GGAATGCCAG CGCCTTCCAC CTCCCCGAGG  
ATCCCTCCA TCCTTGCATC CTCATCGGGC CTGGCACAGG CATCGTGCCC TTCCGCAGTT TCTGGCAGCA ACGGCTCCAT  
GACTCCAGC ACAAGGGAGT GCGGGGAGGC CGCATGACCT TGGTGTGTTG GTGCCGCCG CCAGATGAGG ACCACATCTA  
CCAGGAGGAG ATGCTGGAGA TGGCCAGAA GGGGGTGCTG CATGCGGTGC ACACAGCCTA TTCCCGCCTG CTGGCAAGC  
CCAAGTCTA TGTTAGGAG ATCTGCGGC AGCAGCTGGC CAGCAGGTTG CTCCGTGTG TCCACAAGGA GCCAGGCCAC  
CTTATGTTT GCGGGGATGT GCGCATGGCC CGGACGTGG CCCACACCTT GAAGCAGCTG GTGGCTGCCA AGCTGAAAT  
GAATGAGGAG CAGGTGAGG ACTATTTCTT TCAGCTCAAG AGCCAGAAGC GCTATCACGA AGATATCTTC GGTGCTGTAT  
TTCTTACGA GCGAAGAAG GACAGGGTGG CGGTGCAGCC CAGCAGCTG GAGATGTCAG CGCTCTGAGG GCCTACAGGA  
GGGGTTAAG CTGCCGGCAC AGAATTAAG GATGGAGCCA GCTCTGCATT ATCTGAGGTC ACAGGGCCTG GGGAGATGGA  
GGAAAGTGAT ATCCCCAGC CTCAAGTCTT ATTTCTCAA CGTTGTCTCC CATCAAGCCC TTTACTTGAC CTCCTAACAA  
GTAGACCCT GGATTGATCG GAGCCTCTC TCTCAAAGT GGGCCTCCCT GGTCCCTTG AGACAAAATC TTAATGCCA  
GGCCTGGGCA GTGGGTGAAA GATGGAATCT GCTGTGAGT GCACCACTT AAGTGACCAC CAGGAGGTG TATCGACCA  
CTGTGTATT AACTGCCTTG GTACAGTTA TTTATGCCT TGATTTAAA AAATAACAC CAGTCTGTT CCCCATGGCC  
ACTTGGGTCT TCCCTGTATG ATTCCTTGAT GGAGATATT ACATGAATTG CATTTACTT TAATC GAATTTCCAC  
TCTGCTGCT GCTCCAGCAG ACGGACGCAC AGTAACATGG GCAACTTGA GAGCGTGGCC CAGGAGCCTG GGCCACCTG  
CGGCCCTGGG CTGGGGCTGG GCCTTGGCT GTGCGGCAAG CAGGGCCAG CCACCCCGC CCTGAGCC AGCCGGGCC  
CAGCATCCCT ACTCCACCA GCGCCAGAAC ACAGCCCCC GAGTCCCCG CTAACCCAGC CCCAGAGGG GCCAAGTTC  
CCTCGTGTGA AGAAGTGGG GGTGGGGAGC ATCACCATG ACACCTCAG CGCCAGGCG CAGCAGGATG GGCCCTGCAC  
CCCAAGACGC TGCTGGGCT CCCTGGTATT TCCAGGAAA CTACAGGGCC GGCCTCCCC CGGCCCCCG GCCCTGAGC

AGCTGCTGAG TCAGGCCCGG GACTTCATCA ACCAGTACTA CAGCTCCATT AAGAGGAGCG GCTCCCAGGC CCACGAACAG  
CGGCTTCAAG AGGTGGAAGC CGAGGTGGCA GCCACAGGCA CCTACCAGCT TAGGGAGAGC GAGCTGGTGT TCGGGGCTAA  
GCAGGCCTGG CGCAACGCTC CCGCTGCGT GGGCCGGATC CAGTGGGGGA AGCTGCAGGT GTTCGATGCC CGGGACTGCA  
GGTCTGCACA GGAAATGTTC ACCTACATCT GCAACCACAT CAAGTATGCC ACCAACCCGG GCAACCTTCG CTCGGCCATC  
ACAGTGTTC CGCAGCGCTG CCCTGGCCGA GGAGACTTC GAATCTGGAA CAGCCAGCTG GTGCGCTACG CGGGCTACCG  
GCAGCAGGAC GGCTCTGTGC GGGGGGACCG AGCCAACGTG GAGATCACCG AGCTCTGCAT TCAGCAGCGG TGGACCCGAG  
GAAACGGTCG CTTGACGTG CTGCCCTGC TGCTGCAGGC CCCAGATGAG CCCCCAGAAC TCTTCTTCT GCCCCCGAG  
CTGGTCTTG AGGTGCCCT GGAGCACCCC ACGCTGGAGT GGTTCGAGC CTTGGGCTG CGCTGGTACG CCTCCCGGC  
AGTGTCCAAC ATGCTGCTGG AATTGGGGG CTTGAGTTC CCCGAGCCC CTTTCACTG CTGGTACATG AGCACTGAGA  
TCGGCAGGAG GAACCTGTGT GACCCTCACC GCTACAACAT CTTGGAGGAT GTGCTGTCT GCATGGACCT GGATACCCGG  
ACCACCTCGT CCCTGTGGAA AGACAAGGCA GCAGTGGAAA TCAACGTGGC CGTGTGTCAG AGTTACCAGC TAGCCAAAGT  
CACCATCGT GACCACACG CGCCACGCG CTTCTTCATG AAGCACTGG AGAATGAGCA GAAGGCCAGG GGGGGCTGCC  
CTGCAGACTG GGCCTGGATC GTGCCCCCA TCTGGGCGAG CTTCACTCT GTTTTCCAT AGGAGATGGT CAACTATTTC  
CTGTCCCCGG CTTCCGCTA CCAGCCAGAC CCTGGAAGG GGAGTGCCG CAAGGGCACC GGCATACCA GGAAGAAGAC  
CTTAAAGAA GTGGCCAACG CCGTGAAGAT CTCGCGCTCG CTCATGGGCA CGGTGATGGC GAAGCGAGTG AAGGCGACAA  
TCCTGTATGG CTCGAGAGAC GGCCGGGCCC AGAGCTACGC ACAGCAGCTG GGGAGACTCT TCCGGAAGGC TTTTGTATCC  
CGGGTCTGT GTATGGATGA GTATGACGTG GTGTCCCTCG AACACGAGAC GCTGGTGTG GTGGTAACCA GCACATTGG  
GAATGGGAT CCCCCGAGA ATGGAGAGAG CTTTGACGT GCCCTGATGG AGATGTCCGG CCCCTACAAC AGTCCCCTC  
GGCCGGAACA GCACAAGAGT TATAAGATCC GCTTCAACAG CATCTCCTGC TCAGACCCAC TGGTGTCTC TTGGCCGGCG  
AAGAGGAAGG AGTCCAGTAA CACAGACAGT GCAGGGGCCC TGGGCACCCT CAGGTCTGT GTGTTCGGGC TCGGCTCCCG  
GGCATACCCC CACTTCTGCG CTTTGTCTCG TGCCGTGGAC ACACGGCTGG AGGAAGTGG CGGGGAGCGG CTGCTGCAGC  
TGGGCCAGGG CGACGAGCTG TGCGGCCAGG AGGAGGCTT CCGAGGCTGG GCCCAGGCTG CTTCCAGGC CGCCTGTGAG  
ACCTTCTGTG TGGGAGAGGA TGCCAAGGCC GCCGCCGAG ACATCTTCAG CCCCAGGCG AGCTGGAAGC GCCAGAGGTA  
CGGCTGAGC GCGCAGGCGG AGGGCCTGCA GTTGCTGCA GGTCTGATCC ACGTGCACAG GCGGAAGATG TTCAGGCTA  
CAATCCGCTC AGTGAAAAAC CTGCAAGCA GCAAGTCCAG GAGGGCCACC ATCTGTGTG GCCTGGACAG CGGAGGCGAG  
GAGGGGCTGC AGTACCAGCC GGGGGACCAC ATAGGTGTCT GCCCGCCAA CCGGCCGGC CTTGTGGAGG CGCTGTGAG  
CGCGTGGAG GACCCGCGG CGCCACTGA GCCCGTGGCA GTAGAGCAGC TGGAGAAGGG CAGCCCTGGT GGCCTCCCC  
CGGCTGGGT GCGGGACCCC CGCTGCCCG CGTGACGCT GCGCCAGGCT CTCACCTTCT TCCTGGACAT CACCTCCCCA  
CCCAGCCCTC AGCTCTGCG GCTGCTCAGC ACCTTGGCAG AAGAGCCAG GGAACAGCAG GAGCTGGAGG CCCTCAGCCA  
GGATCCCGA CGCTACGAG AGTGGAAGTG GTTCCGTGC CCCACGCTGC TGGAGGTGCT GGAGCAGTTC CCGTCCGTGG  
CGCTGCCTGC CCACTGTCTC CTCACCCAG TGCTCTGTCT CAGCCCGG TACTACTCAG TCAGCTCGG ACCCAGACC  
CACCCAGGAG AGATCCACCT CACTGTAGCT GTGCTGGCAT ACAGGACTCA GGATGGGCTG GGCCCCCTGC ACTATGGAGT  
CTGCTCCAG TGGTAAGCC AGCTCAAGCC CGGAGACCCT GTGCCCTGCT TCATCCGGGG GGCTCCCTCC TTCGGCTGC  
CACCCGATCC CAGCTTGCCC TGCATCTGG TGGGTCCAG CACTGGCATT GCGCCCTTCC GGGGATTCTG GCAGGAGCGG  
CTGCATGACA TTGAGAGCAA AGGGCTGCAG CCCACTCCCA TGACTTTGGT GTTCGGCTGC CGATGCTCCC AACTTGACCA  
TCTCTACGC GACGAGGTGC AGAAGCCCA GCAGCGCGG GTGTTTGGCC GAGTCTCAG CGCCTTCTC CGGGAACCTG  
ACAAACCCAA GACCTACGTG CAGGACATCC TGAGGACGGA GTGGCTGCG GAGGTGCACC GCGTGTCTG CTCGAGCGG  
GGCCACATGT TTGTCTGCG CGATGTTACC ATGGCAACCA ACGTCTGCA GACCGTGCAG CGCATCTGG CGACGGAGGG  
CGACATGGAG CTGGACGAGG CCGGCGACGT CATCGCGTG CTGCGGGATC AGCAACGCTA CCACGAAGAC ATTTTCGGGC  
TCACGTGCG CACCCAGGAG GTGACAAGCC GCATACGCAC CCAGAGCTT TCCTTGAGG AGCGTCAGT GCGGGGCGCA  
GTGCCCTGG CGTTCGACCC TCCCGGCTCA GACACCAACA GCCCTGAGA GCCGCTGGC TTCCCTTCC AGTTCGGGA  
GAGCGGCTGC CCGACTCAGG TCCGCCGAC CAGGATCAG CCCGCTCCTC CCTCTTGG GTGGTGCTT CTCACCTG  
TCCAGAGGCT GCAAGGATT AGCATTATTC TCCAGGAAG GAGCAAAACG CTTCTTTCC CTCTAGGC CTGTTGCTC  
GGGCTGGGT CCGCCTTAAT CTGGAAGGCC CCTCCAGCA GCGGTACCCC AGGGCCTACT GCCACCCGCT TCCTGTTCT  
TAGTCCGAAT GTTAGATTCC TCTGCTCT CTCAGGAGTA TCTTACCTGT AAAGTCTAAT CTCTAAATCA AGTATTATT  
ATTGAAGATT TACCATAAGG GACTGTGCCA GATGTTAGGA GAACCTACTA AGTGCTACC CCAGCTC-3' (FRAG. NO:1897)

(SEQ. ID NO:1898)

5'-CATATGTATG GGAATACTGT ATTTACAGGCA TTATAAGGAA TGAAATTATA GGCCGGGCAT TGTGGCTAAC  
CTTGTAATC CTAGCACTTT GAGAGGCTGA AGTGGGCGA TCACCTGAGC TTCAGAGTTC GAGACCAGCA  
TGGACAACAT GGTGAAACCC AGTCTCTACC AAAACACAA AAATATTAGC TGGGTGTGGT GGTGCATGCC  
TGTAAGTCCA GCTACTCAGG AGGCTGAGGT GGGAGGATCG CTTGAGCCTG GGAGGCAGAA GTTGCAATGA  
GCAGAGATCG TGCCACTCCG CTCCAGTCTT GGTGACAGAA TGAGACTCCA TCTCAAAAT AAATAATAA  
ATAAATAAAA TAAATGAAAT GAAATTATA GAAATTACCA CTTTTTCATG TAAGAAGTGA TCATTTCAT  
TATAAGGGA GGAATTTAAT CCTACCTGCC ATTCCACCA AGCTTACCTA GTGCTAAAGG ATGAGGTGTT  
AGTAAGACCA ACATCTCAGA GGCCTCTCTG TGCCAATAGC CTTCTTCTT TCCCTTCCA AAAACCTCAA  
GTGACTAGTT CAGAGGCTG TCTGGAATAA TGGCATCATC TAATATCACT GGCCTTCTGG AACCTGGGCA  
TTTTCCAGTG TGTTCATAC TGTCATATT CCCCAGCTT CCTGGACTCC GTGCACAAGC TGGAAAAGTG  
AGAGGATGGA CAGGGATTAA CCAGAGAGCT CCTGTGCTAG GAAAAAATCT CCCAGATGCT GAAAGTGAGG  
CCATGTGGCT TGGCCAAATA AAACCTGGCT CCGTGGTGCC TCTGTCTTAG CAGCCACCCT GCTGATGAAC  
TGCCACCTTG GACTTGGGAC CAGAAAGAGG TGGGTGGGT GAAGAGGCAC CACACAGAGT GATGTAACAG  
CAAGATCAGG TCAACACAG GCCCTGGCAG TCACAGTCAT AAATTAGCTA ACTGTACACA AGCTGGGGAC  
ACTCCCTTTG GAAACCAAAA AAAAAAAGAA CTTTATGCA CTTTATGCA AAAACAACTC TCTGGATGGC  
ATGGGGTGAG TATAAATACT TCTTGGCTGC CAGTGTGTTT ATAACTTTGT AGCGAGTCGA AAAGTGGGC  
TCCGGCCGCA GAGAACTCAG CCTCATTCCT GCTTTAAAT CTCTCGGCCA CCTTTGATGA GGGGACTGGG  
CAGTTCTAGA CAGTCCCGAA GTTCTCAAG CACAGGCTCT TTCCTGGTTT GACTGTCTT ACCCGGGGA  
GGCAGTGCAG CCAGCTGCAA GGTGAGTTGC C-3' (FRAG. NO: 2506)

5'-CTGCTTAA ATCTCTCGG CACCTTTGAT GAGGGGACTG GGCAGTTCTA GACAGTCCCG AAGTTCTCAA GGCACAGGTC  
TCTTCTGGT TTGACTGTC TTACCCGCG GAGGCAGTGC AGCCCCACA GTGAAGAACA TCTGAGCTCA  
AATCCAGATA AGTGACATAA GTGACCTGCT TTGTAAAGCC ATAGAGATGG CTGTCTCTG GAAATTTCTG TTCAAGACCA

AATTCCACCA GTATGCAATG AATGGGGAAA AAGACATCAA CAACAATGTG GAGAAAGCCC CCTGTGCCAC CTCAGTCCA  
GTGACACAGG ATGACCTTCA GTATCACAAC CTCAGCAAGC AGCAGAATGA GTCCCCGAG CCCCTCGTGG AGACGGGAAA  
GAAGTCTCCA GAATCTCTGG TCAAGCTGGA TGAACCCCA TTGTCTCCC CACGGCATGT GAGGATCAAA AACTGGGGCA  
GCGGGATGAC TTTCGAAGAC AACTTCCACC ATAAGGCCAA AGGGATTTTA ACTTGCAGGT CCAAATCTTG CCTGGGGTCC  
ATTATGACTC CCAAAGTTT GACCAGAGGA CCCAGGGACA AGCTACCCC TCCAGATGAG GTTCTACCTC AAGTATCGA  
ATTGTCAAAC CAATATTACG GCTCCTTCAA AGAGGCAAAA ATAGAGGAAC ATCTGGCCAG CTTTGAAGCG GTAACAAAGG  
AGATAGAAAC AACAGGAACC TACCAACTGA CGGGAGATGA GCTCATCTTC GCCACCAAGC AGGCCTGGCG CAATGCCCA  
CGCTGCATTG GGAGGATCCA GTGGTCCAAC CTGCAAGTCT TCGATGCCG CAGCTGTTCC ACTGCCCGG AAATGTTTGA  
ACACATCTGC AGACACGTGC GTTACTCCAC CAACAATGGC AACATCAGGT CGGCCATCAC CGTGTTCCTC CAGCGGAGTG  
ATGGCAAGCA CGACTTCCGG GTGTGGAATG CTCAGTCTAC CCGCTATGCT GGCTACCAGA TGCCAGATGG CAGCATCAGA  
GGGGACCCTG CCAACGTGGA ATTCACTCAG CTGTGCATCG ACCTGGGCTG GAAGCCCAAG TACGGCCGCT TCGATGTGGT  
CCCCCTGGTC CTGACGGCCA ATGGCCGTGA CCTGAGCTC TTGCAATACC CACCTGACCT TGTGCTTGAG GTGGCCATGG  
AACATCCCAA ATACGAGTGG TTTCGGGAAC TGGAGCTAAA GTGGTACGCC CTGCTGCAG TGGCCAAACAT GCTGCTTGAG  
GTGGGCGGCC TGGAGTTCCC AGGGTGCCCC TTCAATGGCT GGTACATGGG CACAGAGATC GGAGTCCGGG ACTTCTGTGA  
CGTCCAGCGC TACAACATCC TGGAGGAAGT GGGCAGGAGA ATGGGCTGGA AAACGCACAA GCTGGCCTCG CTCTGAAAG  
ACCAGGCTGT CGTTGAGATC AACATTGCTG TGATCCATAG TTTCAGAAG CAGAATGTGA CCATCATGGA CCACACTCG  
GCTGCAGAA CTTCATGAA GTACATGCAG AATGAATACC GGTCCCGTGG GGGCTGCCCG GCAGACTGGA TTTGGCTGGT  
CCCTCCCATG TCTGGGAGCA TCACCCCGT GTTTCACCG GAGATGTGTA ACTACGTCT GTCCCTTTC TACTACTATC  
AGGTAGAGGC CTGGAAGAAC CATGTCTGGC AGGACGAGAA GCGGAGACCC AAGAGAAGAG AGATTCCATT GAAAGTCTTG  
GTCAAAGCTG TGCTCTTTCG CTGTATGCTG ATGCGCAAGA CAATGGCGTC CCGAGTCAGA GTCACCATCC TCTTTCGCAC  
AGAGACAGGA AAATCAGAGG CGCTGGCCTG GGACCTGGGG GCCTTATTCA GCTGTGCCTT CAACCCCAAG GTTGTCTGCA  
TGGATAAGTA CAGGCTGAGC TGCTGGAGG AGGAACGGCT GCTGTGTGGT GTGACCAGTA CGTTTGGCAA TGGAGACTGC  
CCTGGCAATG GAGAGAAACT GAAGAAATCG CTCTTCATGC TGAAAGAGCT CAACAACAAA TTCAGGTACG CTGTGTTTGG  
CCTCGGCTCC AGCATGTACC CTCGGTCTG CGCTTTGTCT CATGAACTG ATCAGAAGCT GTCCCACTG GGGCCCTCTC  
AGCTCACCCC GATGGGAGAA GGGGATGAGC TCAGTGGGCA GGAGGACGCC TTCCGAGCT GGGCCGTGCA AACCTTCAAG  
GCAGCCTGTG AGACGTTTGA TGTCCGAGGC AAACAGCACA TTCAGATCCC CAAGCTCTAC ACCTCCAATG TGACCTGGGA  
CCCGCACCAC TACAGGCTCG TGCAGGACTC ACAGCCTTG GACCTCAGCA AAGCCCTCAG CAGCATGCAT GCCAAGAACG  
TGTTACCAT GAGGCTCAAA TCTCGGCAGA ATCTACAAAG TCCGACATCC AGCCGTGCCA CCATCCTGGT GGAACCTCTC  
TGTGAGGATG GCCAAGGCT GAACCTACCTG CCGGGGGAGC ACCTTGGGGT TTGCCAGGC AACCAGCCGG CCCTGGTCCA  
AGGCATCTG GAGCGAGTGG TGGATGGCCC CACACCCAC CAGACAGTGC GCCTGGAGGA CCTGGATGAG AGTGGCAGCT  
ATTGGGTCTG TGACAAGAGG CTGCCCCCT GCTCACTCAG CCAGGCGCTC ACCTACTCCC CGGACATCAC CACACCCCA  
ACCCAGCTGC TGCTCAAAA GCTGGCCAG GTGGCCACAG AAGAGCCTGA GAGACAGAGG CTGGAGGCCG TGTGCCAGCC  
CTCAGAGTAC AGCAAGTGA AGTTCACCAA CAGCCCCACA TTCTGGAGG TGCTAGAGGA GTTCCCGTCC CTGCGGGTGT  
CTGCTGGCTT CTGCTTTCC CAGTCCCCA TTCTGAAGCC CAGGTTCTAC TCCATCAGCT CTCCCGGGA TCACACGCC  
ACGGAGATCC ACCTGACTGT GGCGTGGTC ACCTACCACA CCGGAGATGG CCAGGGTCCC CTGCACCAGG GTGTCTGCAG  
CACATGGCTC AACAGCCTGA AGCCCCAAGA CCCAGTGCCC TGCTTTGTGC GGAATGCCAG CGCCTTCCAC CTCCCCAGG  
ATCCCTCCCA TCTTGTATC CTATCGGC CTGCTGGGC CATCTGGCC CATCTGGCC TTCCGCACTT TGTGGCAGCA ACGGCTCAT  
GACTCCAGC ACAAGGGAGT GCGGGGAGGC CGCATGACCT TGGTGTGGT GTGCCGCCG CCAGATGAGG ACCACATCTA  
CCAGGAGGAG ATGCTGGAGA TGGCCAGAA GGGGGTGTG CATGCGGTGC ACACAGCCTA TTCCCGCCTG CTGGCAAGC  
CCAAGGTCTA TGTTACGAGC ATCTGCGGC AGCAGTGGC CAGCGAGGTG CTCCGTGTG TCCACAAGGA GCCAGGCCAC  
CTCTATGTTT GCGGGGATGT GCGCATGGCC CGGACGTGG CCCACACCCT GAAGCAGCTG GTGGCTGCCA AGCTGAAATT  
GAATGAGGAG CAGGTGAGG ACTATTTCTT TCAGTCAAG AGCCAGAAGC GCTATCAGA AGATATCTTC GGTGCTGTAT  
TTCTTACGA GCGGAAGAAG GACAGGGTGG CGTGCAGCC CAGCAGCTG GAGATGTAC CGCTGTAGG GCCTACAGGA  
GGGGTTAAAG CTGCCGGCAC AGAATTTAAG TGTGGAGCCA GCTCTGCATT ATCTGAGGT ACAGGGCCTG GGGAGATGGA  
GGAAAGTGAT ATCCCCAGC CTCAAGTCTT ATTTCTCAA CGTTGCTCCC CATCAAGCCC TTTACTTGAC CTCTAACAA  
GTAGCACCTT GGATTGATC GAGCCTCTC TCTAAATG GGGCTCCCT GGTCCCTGG AGACAAAATC TTAATGCCA  
GGCCTGGCA GTGGGTGAAA GATGGAATG GCTGCTGAGT GCACCACTT AAGTGACCAC CAGGAGGTGC TATCGACCA  
CTGTGTATT AACTGCCTG TGTACAGTTA TTTATGCCCT TGTATTTAAA AAATAACAC CAGTCTGTT CCCCATGGCC  
ACTTGGTCT TCCCTGATG ATTCCTTGAT GGAGATATT ACATGAATTG CATTTACTT TAATC-3' (FRAG. NO. 2507)

5'-GAATTCAC TCTGCTGCT GCTCCAGCAG ACGGACGCAC AGTAACATGG GCAACTTGAA GAGCGTGGCC  
CAGGAGCCTG GGCCACCCTG CGGCCTGGG CTGGGGCTGG GCCTTGGGCT GTGCGCAAG CAGGGCCAG CCACCCGGC  
CCCTGAGCCC AGCCGGGCCC CAGCATCCT ACTCCACCA GCGCCAGAAC ACAGCCCCC GAGCTCCCCG CTAACCCAGC  
CCCCAGAGG GCCCAAGTTC CCTCGTGTGA AGAAGTGGGA GGTGGGGAGC ATCCTATG ACACCTCAG CGCCAGGCG  
CAGCAGGATG GGCCCTGCAC CCAAGACGC TGCTGGGT CCTTGGTATT TCCACGAAA CTACAGGGCC GGCCCTCCC  
CGCCCCCCC GCCCTGAGC AGCTGCTGAG TCAGGCCCCG GACTTATCA ACCAGTACTA CAGTCCATT AAGAGGAGCG  
GCTCCAGGC CCACGAACAG CGGCTTCAAG AGGTGGAAGC CGAGGTGGCA GCCACAGGCA CCTACCAGT TAGGGAGAGC  
GAGCTGGTGT TCGGGGCTAA GCAGGCTGG CGAACGCTC CCCGCTGCGT GGGCCGATC CAGTGGGGGA AGCTGCAGGT  
GTTGATGCC CGGACTGCA GGTCTGACA GGAAATGTT ACCTACATCT GCAACCATAT CAAGTATGCC ACCAACGGG  
GCAACCTTC CTGCGCCATC ACAGTGTTC CGCAGCGCTG CCTGGCCGA GGAGACTTC GAATCTGGA CAGCCAGCTG  
GTGCGTACG CGGGCTACC GCAGCAGGAC GGCTCTGTG GGGGGGACCC AGCCAACGTG GAGATCACC AGCTGTGAT  
TCAGCAGGC TGGACCCG GAAACGGTGG TCTGAGCTG CTGCCCCG TGCTGCAGG CCCAGATGAG CCCCAGAAC  
TCTTCTTCT GCCCCCCGAG CTGGTCTTG AGGTGCCCC GTGACACCC ACGCTGGAGT GGTGTGAGC CTTGGGCTG  
CGCTGGTACG CCTCCCGG AGTGTCCAAC ATGCTGCTGG AAATTGGGG CCTGGAGTTC CCCGAGGCC CTTTCACTG  
CTGGTACATG AGCACTGAGA TCGGCACGAG GAACCTGTGT GACCCTCACC GCTACAACAT CCTGGAGGAT GTGGCTGTCT  
GCATGGACCT GGATACCCG ACCACCTCGT CCCTGTGGAA AGACAAGGCA GCAAGTGGAA TCAACGTGGC CGTGTGCAC  
AGTTACCAGC TAGCCAAAGT CACCATCGTG GACCACACG CCGCCACGGC CTCTTTCATG AAGCACCTGG AGAATGAGCA  
GAAGGCCAGG GGGGGCTGCC CTGCAGACTG GGCTGGATC GTGCCCCCA TCTGGGCGAG CCTCACTCT GTTTCCATC  
AGGAGATGGT CAACTATTTC CTGCCCCG CTTCCGCTA CCAGCCAGAC CCCTGGAAGG GGAGTGCCG CAAGGCCAC

GGCATCACCA GGAAGAAGAC CTTTAAAGAA GTGGCCAACG CCGTGAAGAT CTCCGCCCTCG CTCATGGGCA CGGTGATGGC  
GAAGCGAGTG AAGGCGACAA TCTGTATGG CTCCGAGACC GGCCGGGCCC AGAGCTACGC ACAGCAGCTG GGGAGACTCT  
TCCGGAAGGC TTTGATCCC CGGGTCTGT GTATGGATGA GTATGACGTG GTGTCCCTCG AACACGAGAC GCTGGTGCTG  
GTGGTAACA GCACATTTGG GAATGGGGAT CCCCGGAGA ATGGAGAGAG CTTTGCAGCT GCCCTGATGG AGATGTCCGG  
CCCCTAACAC AGTCCCCCTC GGCCGGAAACA GCACAAGAGT TATAAGATCC GCTTCAACAG CATCTCCCTG TCAGACCCAC  
TGGTGTCTC TTGGCGGCGG AAGAGGAAGG AGTCCAGTAA CACAGACAGT GCAGGGGCCC TGGGCACCCT CAGGTTCTGT  
GTGTTCCGGC TCGGTCCCC GGCATACCCC CACTTCTGCG CTTTGTCTG TGCCGTGGAC ACACGGCTGG AGGAAGTGGG  
CGGGGAGCGG CTGCTGCAGC TGGGCCAGGG CGACGAGCTG TGCGGCCAGG AGGAGGCCTT CCGAGGCTGG GCCCAGGCTG  
CCTTCCAGGC CGCTGTGAG ACCTTCTGTG TGGGAGAGGA TGCCAAGGCC GCCGCCGAG ACATCTTACG CCCCACACGG  
AGCTGGAAGC GCCAGAGTA CCGGTGAGC GCCCAGGCCG AGGGCCTGCA GTTGTCTGCA GGTCTGATCC ACGTGCACAG  
GCGGAAGATG TTCCAGGCTA CAATCCGCTC AGTGGAAGAA CTGCAAAAGCA GCAAGTCCAC GAGGGCCACC ATCTGGTGC  
GCCTGGACAC CGGAGGCCAG GAGGGGCTGC AGTACCAGCC GGGGGACCAC ATAGGTGTCT GCCCGCCCAA CCGGCCCGGC  
CTTGTGGAGG CGCTGCTGAG CCGCGTGGAG GACCCGCGG CGCCACTGA GCCCGTGGCA GTAGAGCAGC TGGAGAAGGG  
CAGCCCTGGT GGCCCTCCCC CCGGTGGGT GCGGGACCCC CGGTGCCCC CGTGACGCT GCGCCAGGCT CTCACCTTCT  
TCCTGGACAT CACCTCCCCA CCCAGCCCTC AGCTCTTGG GCTGCTCAGC ACCTTGGCAG AAGAGCCAG GGAACAGCAG  
GAGCTGGAGG CCCTCAGCA GGATCCCCGA CGCTACGAGG AGTGGAAGTG GTTCCGCTGC CCCACGCTGC TGGAGGTGCT  
GGAGCAGTTC CCGTCGGTGG CGCTGCCTGC CCCACTGCTC CTCACCCAG TGCTCTGCT CCAGCCCCGG TACTACTCAG  
TCAGCTCGC ACCCAGCACC CACCCAGGAG AGATCCACCT CACTGTAGCT GTGCTGGCAT ACAGGACTCA GGATGGGCTG  
GGCCCCCTGC ACTATGGAGT CTGCTCCAG TGGCTAAGCC AGCTCAAGCC CGGAGACCCT GTGCCCTGCT TCATCCGGGG  
GGCTCCCTCC TTCCGGCTGC CACCCGATCC CAGCTTGCCC TGCATCTGG TGGGTCCAGG CACTGGCATT GCCCCTTCC  
GGGGATTCTG GCAGGAGCGG CTGCATGACA TTGAGAGCAA AGGGCTGCAG CCCACTCCCA TGACTTTGGT GTTCGGCTGC  
CGATGCTCCC AACTTGACCA TCTTACCGC GACGAGGTGC AGAACGCCCA GCAGCGCGGG GTGTTTGGCC GAGTCTCAC  
CGCTTCTCC CGGGAACCTG ACAACCCCAA GACCTACGTG CAGGACATCC TGAGGACGGA GCTGGCTGCG GAGGTGCACC  
GCGTGTCTG CCTCGAGCGG GGCCACATGT TTGTCTGCG CGATGTTACC ATGGCAACCA ACGTCTGCA CCGGTGCAG  
CGCATCTGG CGACGGAGGG CGACATGGAG CTGGACGAG CCGGCGACGT CATCGGCTG CTGCGGGATC AGCAACGCTA  
CCACGAAGAC ATTTTCGGGC TCACGCTGCG CACCCAGGAG GTGACAAGCC GCATACGCAC CCAGAGCTTT TCCTTGACAG  
AGCGTCAGT GCGGGGCGCA GTGCCCTGGG CGTTCGACCC TCCCGCTCA GACACCAACA GCCCTGAGA GCCGCTGGC  
TTTCCCTTCC AGTTCCGGGA GAGCGGCTGC CCGACTCAGG TCCGCCCCGAC CAGGATCAGC CCCGCTCTC CCCTCTTGAG  
GTGGTGCTT CTCACATCTG TCCAGAGGCT GCAAGGATC AGCATTATTC CTCAGGAAG GAGCAAAACG CCTCTTTTCC  
CTCTTAGGC CTGTTGCTC GGGCTGGGT CCGCTTAAAT CTGGAAGGCC CCTCCAGCA GCGGTACCCC AGGGCTACT  
GCCACCCGCT TCCTGTTTCT TAGTCCGAAT GTTAGATTCC TCTTGCTCT CTCAGGAGTA TCTTACCTGT AAAGTCTAAT  
CTCTAAATCA AGTATTTATT ATTGAAGATT TACCATAAGG GACTGTGCCA GATGTTAGGA GAACTACTAA AGTGCCTACC  
CCAGCTC-3' (FRAG. NO: ) (SEQ. ID NO: 2508)

5'-CCCCGGGG-3' (FRAG. NO:1898) (SEQ. ID NO: 1909)

5'-GGGGCCGCTGGG-3' (FRAG. NO:1899) (SEQ. ID NO:1910)

5'-GGGGGTGTGG-3' (FRAG. NO:1900) (SEQ. ID NO: 1911)

5'-CTGCCTCCCCGGGT-3' (FRAG. NO:1442)(SEQ. ID NO:1452)

5'-TTCTGCTGCTTGCTG-3' (FRAG. NO:1443)(SEQ. ID NO:1453)

5'-CTTCTTTCCCGTCTCC-3' (FRAG. NO:1444)(SEQ. ID NO:1454)

5'-CTTCTTTCCCGTCTCC-3' (FRAG. NO:1445)(SEQ. ID NO:1455)

5'-TTTTGCTCTTTG-3' (FRAG. NO:1446)(SEQ. ID NO:1456)

5'-GGTTCCTGTGTTTCT-3' (FRAG. NO:1447)(SEQ. ID NO:1457)

5'-GGCCTGCTGGTGGCG-3' (FRAG. NO:1448)(SEQ. ID NO:1458)

5'-GCTTGTGCGTTTCC-3' (FRAG. NO:1449)(SEQ. ID NO:1459)

5'-TCTCTCTCTCTTGGGTCTCCGCTTCTCGTCTGCC-3' (FRAG. NO:1450)(SEQ. ID NO:1460)

5'-TTTTCTGTCTCTGTCG-3' (FRAG. NO:1451)(SEQ. ID NO:1461)

5'-GCCGTCTCTCTCC-3' (FRAG. NO:1452)(SEQ. ID NO:1462)

5'-GGCGTCTCTGCCC-3' (FRAG. NO:1453)(SEQ. ID NO:1463)

5'-TGTGCTGTTGCTCGG-3' (FRAG. NO:1454)(SEQ. ID NO:1464)

5'-GTGGTGCGGGTCCC-3' (FRAG. NO:1455)(SEQ. ID NO:1465)

5'-GGTGTCTCCCCGGC-3' (FRAG. NO:1456)(SEQ. ID NO:1466)

5'-GGGCGGCTGGTGGCTGGGC-3' (FRAG. NO:1457)(SEQ. ID NO:1467)

5'-CTGTCTGGTGGGTGTGGGCC-3' (FRAG. NO:1458)(SEQ. ID NO:1468)

5'-GCTGGGTGGGGTGTGGTG-3' (FRAG. NO:1459)(SEQ. ID NO:1469)

5'-GGCTCTTCTGTGGCC-3' (FRAG. NO:1460)(SEQ. ID NO:1470)

5'-TGTGGGCTGTGGTG-3' (FRAG. NO:1461)(SEQ. ID NO:1471)

5'-TCTCTGTGGGCGTGTG-3' (FRAG. NO:1462)(SEQ. ID NO:1472)

5'-CTGGGTCTTGGGGCTTC-3' (FRAG. NO:1463)(SEQ. ID NO:1473)

5'-CTCCCTTGTGCTGGG-3' (FRAG. NO:1464)(SEQ. ID NO:1474)

5'-TGCGGCTCCCCGC-3' (FRAG. NO:1465)(SEQ. ID NO:1475)

5'-CCCCCTTCTGGGCC-3' (FRAG. NO:1466)(SEQ. ID NO:1476)

5'-GGTGGCCTGGCTCCTTGTGG-3' (FRAG. NO:1467)(SEQ. ID NO:1477)

5'-GCGCTTCTGGCTCTTG-3' (FRAG. NO:1468)(SEQ. ID NO:1478)

5'-CCCTGTCTTCTTCGCTCGT-3' (FRAG. NO:1469)(SEQ. ID NO:1479)

5'-GGCTGCTGGGCTGC-3' (FRAG. NO:1470)(SEQ. ID NO:1480)

5'-CTGCCCCBGTGTTTGTCTCCTCCTGCGTGGGGGGBGCBTGG-3' (FRAG. NO:1901) (SEQ. ID NO: 1912)

#### **NF-kB Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-CGGCCCTTCT CACTGGAGC ACCGGGCAGT CCTCCATGGG AGGGTTGGC TTGGCCGGG CTGCCCGTG CCTCCTTGT  
GCTGGTCCCT CGTTGTCTT GGGCCCCG TCCCGCTGCT CGGCCTCCGT GTTCTTTGGC CTCTGTCTC GCCTGCTGC

TTGTCCCGTC CCTCCTCGC TTGCGTTTCC CTCTTCTTG TCTCCAGGC CTTCCTCCGC TTCCGCTGCT GGGGCCCCGG  
 CCGGGGGGGC GCTCGGCTCC GCGGCTTCTT CCCCAGCTGG GGGGTCTGCT TCTCCGGGGC CTGCGGCTCG CCGGCTCGGG  
 GCTGCGTGGC CCGCGCGCGG CGTCCGCGGT GGGTGGCGCT GTCCCGCCGT GGTGTGTCTC CGTCTCTGTC CTGCGCCGTC  
 CTGGTCTGCC CGTGGGGTCC TGGGCGTGGT GGGGGGCGTC TGTTGCTCG TCTGCCCGCT GGGGCTTCGG GCTCGGGGCT  
 GTTCGTCGCC CCGCGGCTC TGTGGCTCC GGGGCTCTC GTTTCTGCTG CTTCGGGTGT CCTTCTCGG GGTGGCCCC  
 GGTCCCGGC CCGTGGGGT TGGGCGGGT CGCTGCCCTG GGCTTCTGGC CCGTCTGGT GTCTGTCTGG GCTTGTCTCG  
 GGTTTCTGGC CTCTGTGCTG GCGCTTCTC TGCTCTGTC TCCGCCCTCC TGGTGGCTCG GCTGGGGGTG CCCGTGCGGG  
 GGTGGGTGTG GGGTGTTC GGGGTCTCC CTTCCC-3' (FRAG. NO:1902) (SEQ. ID NO:1913)

5'-GGGCGGGTCCG-3' (FRAG. NO:1903) (SEQ. ID NO:1914)

5'-GCGCCGTCC-3' (FRAG. NO:1904) (SEQ. ID NO:1915)

5'-GGGCGTGGTGG-3' (FRAG. NO:1905) (SEQ. ID NO:1916)

5'-GTTGGGCTTGCCGGGG-3' (FRAG. NO:1471)(SEQ. ID NO:1481)

5'-CTGCCCCGTGCCTCC-3' (FRAG. NO:1472)(SEQ. ID NO:1482)

5'-TCTTGGCTGGTCCCTCGT-3' (FRAG. NO:1473)(SEQ. ID NO:1483)

5'-TGTCTTGGGCCCC-3' (FRAG. NO:1474)(SEQ. ID NO:1484)

5'-GCTCCCGCTGCTCGGCCTCCGT-3' (FRAG. NO:1475)(SEQ. ID NO:1485)

5'-GTTCTTTGGCCTCTTGCTCC-3' (FRAG. NO:1476)(SEQ. ID NO:1486)

5'-GCCTGCTGTCTGTGTC-3' (FRAG. NO:1477)(SEQ. ID NO:1487)

5'-CGTCCCCTCTCGCTTGCCTTC-3' (FRAG. NO:1478)(SEQ. ID NO:1488)

5'-CCTCTTCTTGTCTTCCA-3' (FRAG. NO:1479)(SEQ. ID NO:1489)

5'-GGCTTCTCTCCGCTTCCGCTGC-3' (FRAG. NO:1480)(SEQ. ID NO:1490)

5'-TGGGGCCCCGCGCCG-3' (FRAG. NO:1481)(SEQ. ID NO:1491)

5'-GGGGGCGCTCGGCTCCGCGGCTTCCCTCCCGG-3' (FRAG. NO:1482)(SEQ. ID NO:1492)

5'-CTGGGGGCTCTGG-3' (FRAG. NO:1483)(SEQ. ID NO:1493)

5'-TCTCCGGGGCTGCGGCTCGC-3' (FRAG. NO:1484)(SEQ. ID NO:1494)

5'-GGGCTCGGGGCTGCGTGC GCC-3' (FRAG. NO:1485)(SEQ. ID NO:1495)

5'-GCGCGGGCGTCCGCGGTG-3' (FRAG. NO:1486)(SEQ. ID NO:1496)

5'-GGTGGCGCTGTCCCGCC-3' (FRAG. NO:1487)(SEQ. ID NO:1497)

5'-GTGGTGTGTCTCCGTTCTCGTCTGCGCGTC-3' (FRAG. NO:1488)(SEQ. ID NO:1498)

5'-CTGGTCTGCCCGTGG-3' (FRAG. NO:1489)(SEQ. ID NO:1499)

5'-GGTCTGGGCGTGGTGG-3' (FRAG. NO:1490)(SEQ. ID NO:1500)

5'-GGGGCGTCTGGTGC-3' (FRAG. NO:1491)(SEQ. ID NO:1501)

5'-CTCGTCTGCCCCGTG-3' (FRAG. NO:1492)(SEQ. ID NO:1502)

5'-GGGCTTCCGGGCTCGG-3' (FRAG. NO:1493)(SEQ. ID NO:1503)

5'-GGCTGTTCTCCCCCTGCCGCTCTGTGGCCTCC-3' (FRAG. NO:1494)(SEQ. ID NO:1504)

5'-GGGGCTCCTCGTTTC-3' (FRAG. NO:1495)(SEQ. ID NO:1505)

5'-GCTGCTCGGGTGTCTTCTC-3' (FRAG. NO:1496)(SEQ. ID NO:1506)

5'-GGCGTGTGGCCCCG-3' (FRAG. NO:1497)(SEQ. ID NO:1507)

5'-GTCCCCGCCCTGCTGGGCTGGGCGGGTC-3' (FRAG. NO:1498)(SEQ. ID NO:1508)

5'-GCTGCCCTGGGCTTCTGGCCCGTCT-3' (FRAG. NO:1499)(SEQ. ID NO:1509)

5'-GGTTGTCTGCGGT-3' (FRAG. NO:1500)(SEQ. ID NO:1510)

5'-GCTTGTCTCGGGTTTCTGG-3' (FRAG. NO:1501)(SEQ. ID NO:1511)

5'-CCTCTGTGCTGGGC-3' (FRAG. NO:1502)(SEQ. ID NO:1512)

5'-GCTTCTCTGCTCTCTGCTCC-3' (FRAG. NO:1503)(SEQ. ID NO:1513)

5'-GCCCTCTGGTGGCTC-3' (FRAG. NO:1504)(SEQ. ID NO:1514)

5'-GGCTGGGGGTGCCCGTGC-3' (FRAG. NO:1505)(SEQ. ID NO:1515)

5'-GGGGTGGGTGTGGGGTGT-3' (FRAG. NO:1506)(SEQ. ID NO:1516)

5'-TTCGGGCTCCTCCCTTCCC-3' (FRAG. NO:1507)(SEQ. ID NO:1517)

5'-CGGCCCCCTCACTGGAGGCACCGGCGAGTCCCATGGGAGG-3' (FRAG. NO:1906) (SEQ. ID NO:1917)

#### **Human Major Basic Protein Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-GTT TCA TCT TGG CTT TAT CCTCT CCC CTT GTT CCT CCC CTCT CCT GCT CTG GRG TCT CCT C TTC CCT CCC TCC  
 CCT GCC GTG TTG TCT GTG GGT GTC GTT TCG CTC TTG TTG CCC TGG GCC CTT CCC TGC TGG GGG GGA GTT TCA TCT  
 TGG GTT TCB TCT TGG CTT TBT CCTCT CCC CTT GTT CCT CCC CTCT CCT GCT CTG GRG TCT CCT C TTC CCT CCC TCC  
 CCT GCC GTG TTG TCT GTG GGT GTC GTT TCG CTC TTG TTG CCC TGG GCC CTT CCC TGC TGG GGG GGB GTT TCB TCT  
 TGG-3' (FRAG. ID:1907) (SEQ. ID NO:1918)

5'-GGG GGA GTT-3' (FRAG. ID:1908) (SEQ. ID NO:1919)

5'-G CCC TGG GCC C-3' (FRAG. ID:1909) (SEQ. ID NO:1920)

5'-GTT TCA TCT TGG CTT TAT CC-3' (FRAG. NO:1508) (SEQ. ID NO:1518)

5'-TCT CCC CTT GTT CCT CCC C-3' (FRAG. NO:1509)(SEQ. ID NO:1519)

5'-TCT CCT GCT CTG GRG TCT CCT C-3' (FRAG. NO:1510)(SEQ. ID NO:1520)

5'-TTC CCT CCC TCC CCT GCC-3' (FRAG. NO:1511)(SEQ. ID NO:1521)

5'-GTG TTG TCT GTG GGT GTC C-3' (FRAG. NO:1512)(SEQ. ID NO:1522)

5'-GTT TCG CTC TTG TTG CCC-3' (FRAG. NO:1513)(SEQ. ID NO:1523)

5'-TGG GCC CTT CCC TGC TGG-3' (FRAG. NO:1514)(SEQ. ID NO:1524)

5'-GGG GGA GTT TCA TCT TGG-3' (FRAG. NO:1515)(SEQ. ID NO:1525)

5'-GTT TCA TCT TGG CTT TAT CCTCT CCC CTT GTT CCT CCC CTCT CCT GCT CTG GRG TCT CCT C TTC CCT CCC TCC  
 CCT GCC GTG TTG TCT GTG GGT GTC GTT TCG CTC TTG TTG CCC TGG GCC CTT CCC TGC TGG GGG GGA GTT TCA TCT  
 TGG-3' (FRAG. ID:1910) (SEQ. ID NO:1921)

5'-GTT TCB TCT TGG CTT TBT CCTCT CCC CTT GTT CCT CCC CTCT CCT GCT CTG GRG TCT CCT C TTC CCT CCC TCC



CCT GCC GTG TTG TCT GTG GGT GTC GTT TCG CTC TTG TTG CCC TGG GCC CTT CCC TGC TGG GGG GGB GTT TCB TCT TGG-3' (FRAG. ID:1911) (SEQ. ID NO:1922)

**Human Eosinophil Major Basic Protein Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-GGG GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1516)(SEQ. ID NO:1526)  
5'-GGG GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1517)(SEQ. ID NO:1527)  
5'-GGG GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1518)(SEQ. ID NO:1528)  
5'-GGG GGB GTT TCB TCT TGG C-3' (FRAG. NO:1519)(SEQ. ID NO:1529)  
5'-GGG GGB GTT TCB TCT TGG-3' (FRAG. NO:1520)(SEQ. ID NO:1530)  
5'-GGG GGB GTT TCB TCT TG-3' (FRAG. NO:1521)(SEQ. ID NO:1531)  
5'-GGG GGB GTT TCB TCT T-3' (FRAG. NO:1522)(SEQ. ID NO:1532)  
5'-GGG GGB GTT TCB TCT-3' (FRAG. NO:1523)(SEQ. ID NO:1533)  
5'-GGG GGB GTT TCB TC-3' (FRAG. NO:1524)(SEQ. ID NO:1534)  
5'-GGG GGB GTT TCB T-3' (FRAG. NO:1525)(SEQ. ID NO:1535)  
5'-GGG GGB GTT TCB-3' (FRAG. NO:1526)(SEQ. ID NO:1536)  
5'-GG GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1527)(SEQ. ID NO:1537)  
5'-GG GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1528)(SEQ. ID NO:1538)  
5'-GG GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1529)(SEQ. ID NO:1539)  
5'-GG GGB GTT TCB TCT TGG C-3' (FRAG. NO:1530)(SEQ. ID NO:1540)  
5'-GG GGB GTT TCB TCT TGG-3' (FRAG. NO:1531)(SEQ. ID NO:1541)  
5'-GG GGB GTT TCB TCT TG-3' (FRAG. NO:1532)(SEQ. ID NO:1542)  
5'-GG GGB GTT TCB TCT T-3' (FRAG. NO:1533)(SEQ. ID NO:1543)  
5'-GG GGB GTT TCB TCT-3' (FRAG. NO:1534)(SEQ. ID NO:1544)  
5'-GG GGB GTT TCB TC-3' (FRAG. NO:1535)(SEQ. ID NO:1545)  
5'-GG GGB GTT TCB T-3' (FRAG. NO:1536)(SEQ. ID NO:1546)  
5'-G GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1537)(SEQ. ID NO:1547)  
5'-G GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1538)(SEQ. ID NO:1548)  
5'-G GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1539)(SEQ. ID NO:1549)  
5'-G GGB GTT TCB TCT TGG C-3' (FRAG. NO:1540)(SEQ. ID NO:1550)  
5'-G GGB GTT TCB TCT TGG-3' (FRAG. NO:1541)(SEQ. ID NO:1551)  
5'-G GGB GTT TCB TCT TG-3' (FRAG. NO:1542)(SEQ. ID NO:1552)  
5'-G GGB GTT TCB TCT T-3' (FRAG. NO:1543)(SEQ. ID NO:1553)  
5'-G GGB GTT TCB TCT-3' (FRAG. NO:1544)(SEQ. ID NO:1554)  
5'-G GGB GTT TCB TC-3' (FRAG. NO:1545)(SEQ. ID NO:1555)  
5'-GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1546)(SEQ. ID NO:1556)  
5'-GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1547)(SEQ. ID NO:1557)  
5'-GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1548)(SEQ. ID NO:1558)  
5'-GGB GTT TCB TCT TGG C-3' (FRAG. NO:1549)(SEQ. ID NO:1559)  
5'-GGB GTT TCB TCT TGG-3' (FRAG. NO:1550)(SEQ. ID NO:1560)  
5'-GGB GTT TCB TCT TG-3' (FRAG. NO:1551)(SEQ. ID NO:1561)  
5'-GGB GTT TCB TCT T-3' (FRAG. NO:1552)(SEQ. ID NO:1562)  
5'-GGB GTT TCB TCT-3' (FRAG. NO:1553)(SEQ. ID NO:1563)  
5'-GB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1554)(SEQ. ID NO:1564)  
5'-GB GTT TCB TCT TGG CTT-3' (FRAG. NO:1555)(SEQ. ID NO:1565)  
5'-GB GTT TCB TCT TGG CT-3' (FRAG. NO:1556)(SEQ. ID NO:1566)  
5'-GB GTT TCB TCT TGG C-3' (FRAG. NO:1557)(SEQ. ID NO:1567)  
5'-GB GTT TCB TCT TGG-3' (FRAG. NO:1558)(SEQ. ID NO:1568)  
5'-GB GTT TCB TCT TG-3' (FRAG. NO:1559)(SEQ. ID NO:1569)  
5'-GB GTT TCB TCT T-3' (FRAG. NO:1560)(SEQ. ID NO:1570)  
5'-B GTT TCB TCT TGG CTT T-3' (FRAG. NO:1561)(SEQ. ID NO:1571)  
5'-B GTT TCB TCT TGG CTT-3' (FRAG. NO:1562)(SEQ. ID NO:1572)  
5'-B GTT TCB TCT TGG CTT-3' (FRAG. NO:1563)(SEQ. ID NO:1573)  
5'-B GTT TCB TCT TGG CT-3' (FRAG. NO:1564)(SEQ. ID NO:1574)  
5'-B GTT TCB TCT TGG C-3' (FRAG. NO:1565)(SEQ. ID NO:1575)  
5'-B GTT TCB TCT TGG-3' (FRAG. NO:1565)(SEQ. ID NO:1576)  
5'-B GTT TCB TCT TG-3' (FRAG. NO:1567)(SEQ. ID NO:1577)  
5'-GTT TCB TCT TGG CTT T-3' (FRAG. NO:1568)(SEQ. ID NO:1578)  
5'-GTT TCB TCT TGG CTT-3' (FRAG. NO:1569)(SEQ. ID NO:1579)  
5'-GTT TCB TCT TGG CT-3' (FRAG. NO:1570)(SEQ. ID NO:1580)  
5'-GTT TCB TCT TGG C-3' (FRAG. NO:1571)(SEQ. ID NO:1581)  
5'-GTT TCB TCT TGG-3' (FRAG. NO:1572)(SEQ. ID NO:1582)  
5'-TT TCB TCT TGG CTT T-3' (FRAG. NO:1573)(SEQ. ID NO:1583)  
5'-TT TCB TCT TGG CTT-3' (FRAG. NO:1574)(SEQ. ID NO:1584)  
5'-TT TCB TCT TGG CT-3' (FRAG. NO:1575)(SEQ. ID NO:1585)  
5'-TT TCB TCT TGG C-3' (FRAG. NO:1576)(SEQ. ID NO:1586)  
5'-T TCB TCT TGG CTT T-3' (FRAG. NO:1577)(SEQ. ID NO:1587)  
5'-T TCB TCT TGG CTT-3' (FRAG. NO:1578)(SEQ. ID NO:1588)  
5'-T TCB TCT TGG CT-3' (FRAG. NO:1579)(SEQ. ID NO:1589)  
5'-TCB TCT TGG CTT T-3' (FRAG. NO:1580)(SEQ. ID NO:1590)  
5'-TCB TCT TGG CTT-3' (FRAG. NO:1581)(SEQ. ID NO:1591)

5'-GGG GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1582)(SEQ. ID NO:1592)  
5'-GG GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1583)(SEQ. ID NO:1593)  
5'-G GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1584)(SEQ. ID NO:1594)  
5'-GGB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1585)(SEQ. ID NO:1595)  
5'-GB GTT TCB TCT TGG CTT T-3' (FRAG. NO:1586)(SEQ. ID NO:1596)  
5'-B GTT TCB TCT TGG CTT T-3' (FRAG. NO:1587)(SEQ. ID NO:1597)  
5'-GTT TCB TCT TGG CTT T-3' (FRAG. NO:1588)(SEQ. ID NO:1598)  
5'-TT TCB TCT TGG CTT T-3' (FRAG. NO:1589)(SEQ. ID NO:1599)  
5'-T TCB TCT TGG CTT T-3' (FRAG. NO:1590)(SEQ. ID NO:1600)  
5'-TCB TCT TGG CTT T-3' (FRAG. NO:1591)(SEQ. ID NO:1601)  
5'-CB TCT TGG CTT T-3' (FRAG. NO:1592)(SEQ. ID NO:1602)  
5'-GGG GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1593)(SEQ. ID NO:1603)  
5'-GG GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1594)(SEQ. ID NO:1604)  
5'-G GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1595)(SEQ. ID NO:1605)  
5'-GGB GTT TCB TCT TGG CTT-3' (FRAG. NO:1596)(SEQ. ID NO:1606)  
5'-GB GTT TCB TCT TGG CTT-3' (FRAG. NO:1597)(SEQ. ID NO:1607)  
5'-B GTT TCB TCT TGG CTT-3' (FRAG. NO:1598)(SEQ. ID NO:1608)  
5'-GTT TCB TCT TGG CTT-3' (FRAG. NO:1599)(SEQ. ID NO:1609)  
5'-TT TCB TCT TGG CTT-3' (FRAG. NO:1600)(SEQ. ID NO:1610)  
5'-T TCB TCT TGG CTT-3' (FRAG. NO:1601)(SEQ. ID NO:1611)  
5'-TCB TCT TGG CTT-3' (FRAG. NO:1602)(SEQ. ID NO:1612)  
5'-GGG GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1603)(SEQ. ID NO:1613)  
5'-GG GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1604)(SEQ. ID NO:1614)  
5'-G GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1605)(SEQ. ID NO:1615)  
5'-GGB GTT TCB TCT TGG CT-3' (FRAG. NO:1606)(SEQ. ID NO:1616)  
5'-GB GTT TCB TCT TGG CT-3' (FRAG. NO:1607)(SEQ. ID NO:1617)  
5'-B GTT TCB TCT TGG CT-3' (FRAG. NO:1608)(SEQ. ID NO:1618)  
5'-GTT TCB TCT TGG CT-3' (FRAG. NO:1609)(SEQ. ID NO:1619)  
5'-TT TCB TCT TGG CT-3' (FRAG. NO:1610)(SEQ. ID NO:1620)  
5'-T TCB TCT TGG CT-3' (FRAG. NO:1611)(SEQ. ID NO:1621)  
5'-GGG GGB GTT TCB TCT TGG C-3' (FRAG. NO:1612)(SEQ. ID NO:1622)  
5'-GG GGB GTT TCB TCT TGG C-3' (FRAG. NO:1613)(SEQ. ID NO:1623)  
5'-G GGB GTT TCB TCT TGG C-3' (FRAG. NO:1614)(SEQ. ID NO:1624)  
5'-GGB GTT TCB TCT TGG C-3' (FRAG. NO:1615)(SEQ. ID NO:1625)  
5'-GB GTT TCB TCT TGG C-3' (FRAG. NO:1616)(SEQ. ID NO:1626)  
5'-B GTT TCB TCT TGG C-3' (FRAG. NO:1617)(SEQ. ID NO:1627)  
5'-GTT TCB TCT TGG C-3' (FRAG. NO:1618)(SEQ. ID NO:1628)  
5'-TT TCB TCT TGG C-3' (FRAG. NO:1619)(SEQ. ID NO:1629)  
5'-GGG GGB GTT TCB TCT TGG-3' (FRAG. NO:1620)(SEQ. ID NO:1630)  
5'-GG GGB GTT TCB TCT TGG-3' (FRAG. NO:1621)(SEQ. ID NO:1631)  
5'-G GGB GTT TCB TCT TGG-3' (FRAG. NO:1622)(SEQ. ID NO:1632)  
5'-GGB GTT TCB TCT TGG-3' (FRAG. NO:1623)(SEQ. ID NO:1633)  
5'-GB GTT TCB TCT TGG-3' (FRAG. NO:1624)(SEQ. ID NO:1634)  
5'-B GTT TCB TCT TGG-3' (FRAG. NO:1625)(SEQ. ID NO:1635)  
5'-GTT TCB TCT TGG-3' (FRAG. NO:1626)(SEQ. ID NO:1636)  
5'-GGG GGB GTT TCB TCT TG-3' (FRAG. NO:1627)(SEQ. ID NO:1637)  
5'-GG GGB GTT TCB TCT TG-3' (FRAG. NO:1628)(SEQ. ID NO:1638)  
5'-G GGB GTT TCB TCT TG-3' (FRAG. NO:1629)(SEQ. ID NO:1639)  
5'-GGB GTT TCB TCT TG-3' (FRAG. NO:1630)(SEQ. ID NO:1640)  
5'-GB GTT TCB TCT TG-3' (FRAG. NO:1631)(SEQ. ID NO:1641)  
5'-B GTT TCB TCT TG-3' (FRAG. NO:1632)(SEQ. ID NO:1642)  
5'-GGG GGB GTT TCB TCT T-3' (FRAG. NO:1633)(SEQ. ID NO:1643)  
5'-GG GGB GTT TCB TCT T-3' (FRAG. NO:1634)(SEQ. ID NO:1644)  
5'-G GGB GTT TCB TCT T-3' (FRAG. NO:1635)(SEQ. ID NO:1645)  
5'-G GGB GTT TCB TCT T-3' (FRAG. NO:1636)(SEQ. ID NO:1646)  
5'-GGB GTT TCB TCT T-3' (FRAG. NO:1637)(SEQ. ID NO:1647)  
5'-GB GTT TCB TCT T-3' (FRAG. NO:1638)(SEQ. ID NO:1648)  
5'-GGG GGB GTT TCB TCT-3' (FRAG. NO:1639)(SEQ. ID NO:1649)  
5'-GG GGB GTT TCB TCT-3' (FRAG. NO:1640)(SEQ. ID NO:1650)  
5'-G GGB GTT TCB TCT-3' (FRAG. NO:1641)(SEQ. ID NO:1651)  
5'-GGB GTT TCB TCT-3' (FRAG. NO:1642)(SEQ. ID NO:1652)  
5'-GGG GGB GTT TCB TC-3' (FRAG. NO:1643)(SEQ. ID NO:1653)  
5'-GG GGB GTT TCB TC-3' (FRAG. NO:1644)(SEQ. ID NO:1654)  
5'-G GGB GTT TCB TC-3' (FRAG. NO:1645)(SEQ. ID NO:1655)  
5'-GGG GGB GTT TCB T-3' (FRAG. NO:1646)(SEQ. ID NO:1656)  
5'-GG GGB GTT TCB T-3' (FRAG. NO:1647)(SEQ. ID NO:1657)  
5'-GGG GGB GTT TCB-3' (FRAG. NO:1648)(SEQ. ID NO:1658)  
5'-TCT CCC CTT GTT CCT CCC C-3' (FRAG. NO:1649)(SEQ. ID NO:1659)  
5'-TCT CCT GCT CTG GTG TCT CCT C-3' (FRAG. NO:1650)(SEQ. ID NO:1660)

5'-TTC CCT CCC TCC CCT GCC-3' (FRAG. NO:1651)(SEQ. ID NO:1661)  
5'-GTG TTG TCT GTG GGT GTC C-3' (FRAG. NO:1652)(SEQ. ID NO:1662)  
5'-GTT TCG CTC TTG TTG CCC-3' (FRAG. NO:1653)(SEQ. ID NO:1663)  
5'-TGG GCC CTT CCC TGC TGG-3' (FRAG. NO:1654)(SEQ. ID NO:1664)  
5'-GGG GGB G-3' (FRAG. NO:1912)(SEQ. ID NO:1923)  
5'-GTG GGT GTC C-3' (FRAG. NO:1913) (SEQ. ID NO:1924)

**BP-1 Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-CCGTGTGTC BGTGGTGTG CCCGTTTGBG GTBTGGCGCT CCBCCBBTTC CCTTTTCTCC TTGTTTCCG TTTCTTGC  
CGTCTGTGGT T-3' (FRAG. NO:1914) (SEQ. ID NO:1925)  
5'-CCCGTTTGBGGBTGTGGC-3' (FRAG. NO:1915) (SEQ. ID NO:1926)  
5'-GCTCCBCCBBTTCCTTTTCTCC-3' (FRAG. NO:1916) (SEQ. ID NO:1927)  
5'-TTGTTTCCGTTTCTCTTG-3' (FRAG. NO:1917) (SEQ. ID NO:1928)  
5'-CCGCTGTGGTT-3' (FRAG. NO:1918) (SEQ. ID NO:1929)  
5'-CCCGTTGAGGTATGGC-3' (FRAG. NO:1919) (SEQ. ID NO:1930)  
5'-GCTCCBCCAATTCCTTTTCTCC-3' (FRAG. NO:1920) (SEQ. ID NO:1931)

**C/EBP Nucleic Acids and Antisense Oligonucleotide Antisense Oligonucleotide Fragments**

5'-GGGCCCCGCCCCGCCCTTTTCTBGCCCC GGC-3' (FRAG. NO:1921) (SEQ. ID NO:1932)  
5'-GGGCCCCGCCCCGCCCTTTTCTBGCCCC GGC-3' (FRAG. NO:1922) (SEQ. ID NO:1933)  
5'-GGGCCCCB GCCCCGCCGCTTTTCTBGCCCCG-3' (FRAG. NO:1923) (SEQ. ID NO:1934)  
5'-GGGCCCCGCCCCGCCCTTTTCTBGCCCCG-3' (FRAG. NO:1924) (SEQ. ID NO:1935)  
5'-GGGCCCCGCCCCGCCCTTTTCTBGCCCC-3' (FRAG. NO:1925) (SEQ. ID NO:1936)  
5'-GGGCCCCGCCCCGCCCTTTTCTBGCCCC-3' (FRAG. NO:1926) (SEQ. ID NO:1937)  
5'-GGGCCCCGCCCCGCCCTTTTCTBGCC-3' (FRAG. NO:1927) (SEQ. ID NO:1938)  
5'-GGGCCCCGCCCCGCCCTTTTCTBGC-3' (FRAG. NO:1928) (SEQ. ID NO:1939)  
5'-GGGCCCCGCCCCGCCCTTTTCTBG-3' (FRAG. NO:1929) (SEQ. ID NO:1940)  
5'-GGGCCCCGCCCCGCCCTTTTCTB-3' (FRAG. NO:1930) (SEQ. ID NO:1941)  
5'-GGGCCCCGCCCCGCCCTTTTCT-3' (FRAG. NO:1931) (SEQ. ID NO:1942)  
5'-GGGCCCCGCCCCGCCCTTTTCT-3' (FRAG. NO:1932) (SEQ. ID NO:1943)  
5'-GGGCCCCGCCCCGCCCTTTT-3' (FRAG. NO:1933) (SEQ. ID NO:1944)  
5'-GGGCCCCGCCCCGCCCTTT-3' (FRAG. NO:1934) (SEQ. ID NO:1945)  
5'-GGGCCCCGCCCCGCCCTT-3' (FRAG. NO:1935) (SEQ. ID NO:1946)  
5'-GGGCCCCGCCCCGCCCT-3' (FRAG. NO:1936) (SEQ. ID NO:1947)  
5'-GGGCCCCGCCCCGCC-3' (FRAG. NO:1937) (SEQ. ID NO:1948)  
5'-GGGCCCCGCCCCGCC-3' (FRAG. NO:1938) (SEQ. ID NO:1949)  
5'-GGGCCCCGCCCCGCC-3' (FRAG. NO:1939) (SEQ. ID NO:1950)  
5'-GGGCCCCGCCCCGCC-3' (FRAG. NO:1940) (SEQ. ID NO:1951)  
5'-GGGCCCCGCCCCGCC-3' (FRAG. NO:1941) (SEQ. ID NO:1952)  
5'-GGGCCCCGCCCCGCC-3' (FRAG. NO:1942) (SEQ. ID NO:1953)  
5'-GGGCCCCGCCCCGCC-3' (FRAG. NO:1943) (SEQ. ID NO:1954)  
5'-GGGCCCCGCCCCGCC-3' (FRAG. NO:1944) (SEQ. ID NO:1955)  
5'-GGCCCBGCCCCGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1945) (SEQ. ID NO:1956)  
5'-GCCCBGCCCCGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1946) (SEQ. ID NO:1957)  
5'-CCCBGCCCCGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1947) (SEQ. ID NO:1958)  
5'-CCBGCCCCGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1948) (SEQ. ID NO:1959)  
5'-CBGCCCCGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1948) (SEQ. ID NO:1960)  
5'-BGCCCCGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1950) (SEQ. ID NO:1961)  
5'-GCCCCGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1951) (SEQ. ID NO:1962)  
5'-CCCCGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1952) (SEQ. ID NO:1963)  
5'-CCCGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1953) (SEQ. ID NO:1964)  
5'-CCGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1954) (SEQ. ID NO:1965)  
5'-CGCCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1955) (SEQ. ID NO:1966)  
5'-GCCGCTTTTCTBGCCCCGCC-3' (FRAG. NO:1956) (SEQ. ID NO:1967)  
5'-CCGCTTTTCTBGCCCCGCC-3' (FRAG. NO:1957) (SEQ. ID NO:1968)  
5'-CGCTTTTCTBGCCCCGCC-3' (FRAG. NO:1958) (SEQ. ID NO:1969)  
5'-GCCTTTTCTBGCCCCGCC-3' (FRAG. NO:1959) (SEQ. ID NO:1970)  
5'-CTTTTCTBGCCCCGCC-3' (FRAG. NO:1960) (SEQ. ID NO:1971)  
5'-CTTTTCTBGCCCCGCC-3' (FRAG. NO:1961) (SEQ. ID NO:1972)  
5'-TTTCTBGCCCCGCC-3' (FRAG. NO:1962) (SEQ. ID NO:1973)  
5'-TTTCTBGCCCCGCC-3' (FRAG. NO:1963) (SEQ. ID NO:1974)  
5'-TTCTBGCCCCGCC-3' (FRAG. NO:1964) (SEQ. ID NO:1975)  
5'-TCTBGCCCCGCC-3' (FRAG. NO:1965) (SEQ. ID NO:1976)  
5'-CTBGCCCCGCC-3' (FRAG. NO:1966) (SEQ. ID NO:1977)  
5'-GCGBGCTGTBCCTCGCTGGGCC-3' (FRAG. NO:1967) (SEQ. ID NO:1978)  
5'-GCGBGCTGTBCCTCGCTGGGCC-3' (FRAG. NO:1968) (SEQ. ID NO:1979)  
5'-GCGBGCTGTBCCTCGCTGGGCC-3' (FRAG. NO:1969) (SEQ. ID NO:1980)

221

5'-GCGBGCGCTGTBCBCTCGCTGGG-3' (FRAG. NO:1970) (SEQ. ID NO:1981)  
5'-GCGBGCGCTGTBCBCTCGCTGG-3' (FRAG. NO:1971) (SEQ. ID NO:1982)  
5'-GCGBGCGCTGTBCBCTCGCTG-3' (FRAG. NO:1972) (SEQ. ID NO:1983)  
5'-GCGBGCGCTGTBCBCTCGCT-3' (FRAG. NO:1973) (SEQ. ID NO:1984)  
5'-GCGBGCGCTGTBCBCTCGC-3' (FRAG. NO:1974) (SEQ. ID NO:1985)  
5'-GCGBGCGCTGTBCBCTCG-3' (FRAG. NO:1975) (SEQ. ID NO:1986)  
5'-GCGBGCGCTGTBCCTC-3' (FRAG. NO:1976) (SEQ. ID NO:1987)  
5'-GCGBGCGCTGTBCCT-3' (FRAG. NO:1977) (SEQ. ID NO:1988)  
5'-GCGBGCGCTGTBCC-3' (FRAG. NO:1978) (SEQ. ID NO:1989)  
5'-GCGBGCGCTGTBC-3' (FRAG. NO:1979) (SEQ. ID NO:1990)  
5'-GCGBGCGCTGTB-3' (FRAG. NO:1980) (SEQ. ID NO:1991)  
5'-GCGBGCGCTGT-3' (FRAG. NO:1981) (SEQ. ID NO:1992)  
5'-GCGBGCGCTGT-3' (FRAG. NO:1982) (SEQ. ID NO:1993)  
5'-GCGBGCGCTGTBCBCTCGCTGGGCCC-3' (FRAG. NO:1983) (SEQ. ID NO:1994)  
5'-GCGBGCTGTBCBCTCGCTGGGCCC-3' (FRAG. NO:1984) (SEQ. ID NO:1995)  
5'-GCGGCTGTBCBCTCGCTGGGCCC-3' (FRAG. NO:1985) (SEQ. ID NO:1996)  
5'-GGCTGTBCBCTCGCTGGGCCC-3' (FRAG. NO:1986) (SEQ. ID NO:1997)  
5'-GCTGTBCBCTCGCTGGGCCC-3' (FRAG. NO:1987) (SEQ. ID NO:1998)  
5'-CTGTBCBCTCGCTGGGCCC-3' (FRAG. NO:1988) (SEQ. ID NO:1999)  
5'-TGTCBCTCGCTGGGCCC-3' (FRAG. NO:1989) (SEQ. ID NO:2000)  
5'-GTCBCTCGCTGGGCCC-3' (FRAG. NO:1990) (SEQ. ID NO:2001)  
5'-TCBCTCGCTGGGCCC-3' (FRAG. NO:1991) (SEQ. ID NO:2002)  
5'-CBCTCGCTGGGCCC-3' (FRAG. NO:1992) (SEQ. ID NO:2003)  
5'-BCCTCGCTGGGCCC-3' (FRAG. NO:1993) (SEQ. ID NO:2004)  
5'-CTCGCTGGGCCC-3' (FRAG. NO:1994) (SEQ. ID NO:2005)  
5'-CTCGCTGGGCCC-3' (FRAG. NO:1995) (SEQ. ID NO:2006)  
5'-TCGCTGGGCCC-3' (FRAG. NO:1996) (SEQ. ID NO:2007)  
5'-CGCTGGGCCC-3' (FRAG. NO:1997) (SEQ. ID NO:2008)  
5'-GCGCGGCCGTBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:1998) (SEQ. ID NO:2009)  
5'-GCGCGGCCGTBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:1999) (SEQ. ID NO:2010)  
5'-GCGCGGCCGTBTGGCGGCGTCGGGCCGG-3' (FRAG. NO:2000) (SEQ. ID NO:2011)  
5'-GCGCGGCCGTBTGGCGGCGTCGGGCCG-3' (FRAG. NO:2001) (SEQ. ID NO:2012)  
5'-GCGCGGCCGTBTGGCGGCGTCGGGCC-3' (FRAG. NO:2002) (SEQ. ID NO:2013)  
5'-GCGCGGCCGTBTGGCGGCGTCGGGC-3' (FRAG. NO:2003) (SEQ. ID NO:2014)  
5'-GCGCGGCCGTBTGGCGGCGTCGGG-3' (FRAG. NO:2004) (SEQ. ID NO:2015)  
5'-GCGCGGCCGTBTGGCGGCGTCGG-3' (FRAG. NO:2005) (SEQ. ID NO:2016)  
5'-GCGCGGCCGTBTGGCGGCGTCG-3' (FRAG. NO:2006) (SEQ. ID NO:2017)  
5'-GCGCGGCCGTBTGGCGGCGTC-3' (FRAG. NO:2007) (SEQ. ID NO:2018)  
5'-GCGCGGCCGTBTGGCGGCGT-3' (FRAG. NO:2008) (SEQ. ID NO:2019)  
5'-GCGCGGCCGTBTGGCGGCG-3' (FRAG. NO:2009) (SEQ. ID NO:2020)  
5'-GCGCGGCCGTBTGGCGGC-3' (FRAG. NO:2010) (SEQ. ID NO:2021)  
5'-GCGCGGCCGTBTGGCGG-3' (FRAG. NO:2011) (SEQ. ID NO:2022)  
5'-GCGCGGCCGTBTGGCG-3' (FRAG. NO:2012) (SEQ. ID NO:2023)  
5'-GCGCGGCCGTBTGGC-3' (FRAG. NO:2013) (SEQ. ID NO:2024)  
5'-GCGCGGCCGTBTGG-3' (FRAG. NO:2014) (SEQ. ID NO:2025)  
5'-GCGCGGCCGTBTG-3' (FRAG. NO:2015) (SEQ. ID NO:2026)  
5'-GCGCGGCCGTBT-3' (FRAG. NO:2016) (SEQ. ID NO:2027)  
5'-GCGCGGCCGTB-3' (FRAG. NO:2017) (SEQ. ID NO:2028)  
5'-GCGCGGCCGT-3' (FRAG. NO:2018) (SEQ. ID NO:2029)  
5'-GCGCGGCCGT-3' (FRAG. NO:2019) (SEQ. ID NO:2030)  
5'-GCGCGGCCGTBTGGCGGCGTCGGGCCGGGC-3' (FRAG. NO:2020) (SEQ. ID NO:2031)  
5'-GCGGCCGTBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2021) (SEQ. ID NO:2032)  
5'-GCGCCGTBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2022) (SEQ. ID NO:2033)  
5'-GGCCGTBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2023) (SEQ. ID NO:2034)  
5'-GCCGTBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2024) (SEQ. ID NO:2035)  
5'-CCGTBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2025) (SEQ. ID NO:2036)  
5'-CGTBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2026) (SEQ. ID NO:2037)  
5'-GTCBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2027) (SEQ. ID NO:2038)  
5'-TCBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2028) (SEQ. ID NO:2039)  
5'-CBTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2029) (SEQ. ID NO:2040)  
5'-BTGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2030) (SEQ. ID NO:2041)  
5'-TGGCGGCGTCGGGCCGGG-3' (FRAG. NO:2031) (SEQ. ID NO:2042)  
5'-GGCGGCGTCGGGCCGGG-3' (FRAG. NO:2032) (SEQ. ID NO:2043)  
5'-GCGGCGTCGGGCCGGG-3' (FRAG. NO:2033) (SEQ. ID NO:2044)  
5'-CGGCGTCGGGCCGGG-3' (FRAG. NO:2034) (SEQ. ID NO:2045)

5'-GGCGTCGGGCCGGGC-3' (FRAG. NO:2035) (SEQ. ID NO:2046)  
5'-GCGTCGGGCCGGGC-3' (FRAG. NO:2036) (SEQ. ID NO:2047)  
5'-CGTCGGGCCGGGC-3' (FRAG. NO:2037) (SEQ. ID NO:2048)  
5'-GTCCGGGCCGGGC-3' (FRAG. NO:2038) (SEQ. ID NO:2049)  
5'-TCGGGCCGGGC-3' (FRAG. NO:2039) (SEQ. ID NO:2050)  
5'-CGGGCCGGGC-3' (FRAG. NO:2040) (SEQ. ID NO:2051)  
5'-CCGCBGGCCBGGGCGCGCCGCGCCGGCCGG-3' (FRAG. NO:2041) (SEQ. ID NO:2052)  
5'-CCGCBGGCCBGGGCGCGCCGCGCCGGCCGG-3' (FRAG. NO:2042) (SEQ. ID NO:2053)  
5'-CCGCBGGCCBGGGCGCGCCGCGCCGGGC-3' (FRAG. NO:2043) (SEQ. ID NO:2054)  
5'-CCGCBGGCCBGGGCGCGCCGCGCCGGG-3' (FRAG. NO:2044) (SEQ. ID NO:2055)  
5'-CCGCBGGCCBGGGCGCGCCGCGCCGG-3' (FRAG. NO:2045) (SEQ. ID NO:2056)  
5'-CCGCBGGCCBGGGCGCGCCGCGCCGG-3' (FRAG. NO:2046) (SEQ. ID NO:2057)  
5'-CCGCBGGCCBGGGCGCGCCGCGCCG-3' (FRAG. NO:2047) (SEQ. ID NO:2058)  
5'-CCGCBGGCCBGGGCGCGCCGCGCCG-3' (FRAG. NO:2048) (SEQ. ID NO:2059)  
5'-CCGCBGGCCBGGGCGCGCCGCGCCG-3' (FRAG. NO:2049) (SEQ. ID NO:2060)  
5'-CCGCBGGCCBGGGCGCGCCGCGCCG-3' (FRAG. NO:2050) (SEQ. ID NO:2061)  
5'-CCGCBGGCCBGGGCGCGCCGCGCC-3' (FRAG. NO:2051) (SEQ. ID NO:2062)  
5'-CCGCBGGCCBGGGCGCGCCGCGC-3' (FRAG. NO:2052) (SEQ. ID NO:2063)  
5'-CCGCBGGCCBGGGCGCGCCG-3' (FRAG. NO:2053) (SEQ. ID NO:2064)  
5'-CCGCBGGCCBGGGCGCGCC-3' (FRAG. NO:2054) (SEQ. ID NO:2065)  
5'-CCGCBGGCCBGGGCGCGC-3' (FRAG. NO:2055) (SEQ. ID NO:2066)  
5'-CCGCBGGCCBGGGCGCG-3' (FRAG. NO:2056) (SEQ. ID NO:2067)  
5'-CCGCBGGCCBGGGCGC-3' (FRAG. NO:2057) (SEQ. ID NO:2068)  
5'-CCGCBGGCCBGGGCG-3' (FRAG. NO:2058) (SEQ. ID NO:2069)  
5'-CCGCBGGCCBGGG-3' (FRAG. NO:2059) (SEQ. ID NO:2070)  
5'-CCGCBGGCCBGG-3' (FRAG. NO:2060) (SEQ. ID NO:2071)  
5'-CCGCBGGCCBG-3' (FRAG. NO:2061) (SEQ. ID NO:2072)  
5'-CCGCBGGCCB-3' (FRAG. NO:2062) (SEQ. ID NO:2073)  
5'-CCGCBGGCC-3' (FRAG. NO:2063) (SEQ. ID NO:2074)  
5'-CCGCBGGC-3' (FRAG. NO:2064) (SEQ. ID NO:2075)  
5'-CGCBGGCCBGGGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2065) (SEQ. ID NO:2076)  
5'-GCBGGCCBGGGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2066) (SEQ. ID NO:2077)  
5'-CBGGCCBGGGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2067) (SEQ. ID NO:2078)  
5'-BGGCCBGGGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2068) (SEQ. ID NO:2079)  
5'-GGCCBGGGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2069) (SEQ. ID NO:2080)  
5'-GCCBGGGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2070) (SEQ. ID NO:2081)  
5'-CCBGGGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2071) (SEQ. ID NO:2082)  
5'-CBGGGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2072) (SEQ. ID NO:2083)  
5'-BGGGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2073) (SEQ. ID NO:2084)  
5'-GGGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2074) (SEQ. ID NO:2085)  
5'-GGCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2075) (SEQ. ID NO:2086)  
5'-GCGCGCCGCGCCGGGCCG-3' (FRAG. NO:2076) (SEQ. ID NO:2087)  
5'-CGCGCCGCGCCGGGCCG-3' (FRAG. NO:2077) (SEQ. ID NO:2088)  
5'-GCGCCGCGCCGGGCCG-3' (FRAG. NO:2078) (SEQ. ID NO:2089)  
5'-CGCCCGCGCCGGGCCG-3' (FRAG. NO:2079) (SEQ. ID NO:2090)  
5'-GCCCGCGCCGGGCCG-3' (FRAG. NO:2080) (SEQ. ID NO:2091)  
5'-CCGCGCGCCGGGCCG-3' (FRAG. NO:2081) (SEQ. ID NO:2092)  
5'-CGCCGCGCCGGGCCG-3' (FRAG. NO:2082) (SEQ. ID NO:2093)  
5'-GCCGCGCCGGGCCG-3' (FRAG. NO:2083) (SEQ. ID NO:2094)  
5'-CCGCGCCGGGCCG-3' (FRAG. NO:2084) (SEQ. ID NO:2095)  
5'-CGGCGCGGCCG-3' (FRAG. NO:2085) (SEQ. ID NO:2096)  
5'-GGCCGGGCCG-3' (FRAG. NO:2086) (SEQ. ID NO:2097)  
5'-GGGCGCBGGCTCCGCB-3' (FRAG. NO:2087) (SEQ. ID NO:2098)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCCCGGCCG-3' (FRAG. NO:2088) (SEQ. ID NO:2099)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCCCGGCCG-3' (FRAG. NO:2089) (SEQ. ID NO:2100)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCCCGGCC-3' (FRAG. NO:2090) (SEQ. ID NO:2101)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCCCGGCC-3' (FRAG. NO:2091) (SEQ. ID NO:2102)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCCCGGC-3' (FRAG. NO:2092) (SEQ. ID NO:2103)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCCCGG-3' (FRAG. NO:2093) (SEQ. ID NO:2104)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCCG-3' (FRAG. NO:2094) (SEQ. ID NO:2105)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGCC-3' (FRAG. NO:2095) (SEQ. ID NO:2106)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCGC-3' (FRAG. NO:2096) (SEQ. ID NO:2107)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCCG-3' (FRAG. NO:2097) (SEQ. ID NO:2108)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCCG-3' (FRAG. NO:2098) (SEQ. ID NO:2109)  
5'-GGGCCCCCTGGCTCGGCCCGCGGCCCGGCTTGCC-3' (FRAG. NO:2099) (SEQ. ID NO:2110)

5'-GGGCCCCCTGGCTCGGCCCCCGCGCCCCGGCTTGCC-3' (FRAG. NO:2100) (SEQ. ID NO:2111)  
5'-GGGCCCCCTGGCTCGGCCCCCGCGCCCCGGCTTGC-3' (FRAG. NO:2101) (SEQ. ID NO:2112)  
5'-GGGCCCCCTGGCTCGGCCCCCGCGCCCCGGCTTG-3' (FRAG. NO:2102) (SEQ. ID NO:2113)  
5'-GGGCCCCCTGGCTCGGCCCCCGCGCCCCGGCTT-3' (FRAG. NO:2103) (SEQ. ID NO:2114)  
5'-GGGCCCCCTGGCTCGGCCCCCGCGCCCCGGCT-3' (FRAG. NO:2104) (SEQ. ID NO:2115)  
5'-GGGCCCCCTGGCTCGGCCCCCGCGCCCCGGC-3' (FRAG. NO:2105) (SEQ. ID NO:2116)  
5'-GGGCCCCCTGGCTCGGCCCCCGCGCCCCGG-3' (FRAG. NO:2106) (SEQ. ID NO:2117)  
5'-GGGCCCCCTGGCTCGGCCCCCGCGCCCCG-3' (FRAG. NO:2107) (SEQ. ID NO:2118)  
5'-GGGCCCCCTGGCTCGGCCCCCGCGCCCC-3' (FRAG. NO:2108) (SEQ. ID NO:2119)  
5'-GGGCCCCCTGGCTCGGCCCCCGCGCCC-3' (FRAG. NO:2109) (SEQ. ID NO:2120)  
5'-GGGCCCCCTGGCTCGGCCCCCGCGC-3' (FRAG. NO:2110) (SEQ. ID NO:2121)  
5'-GGGCCCCCTGGCTCGGCCCCCGCG-3' (FRAG. NO:2111) (SEQ. ID NO:2122)  
5'-GGGCCCCCTGGCTCGGCCCCCG-3' (FRAG. NO:2112) (SEQ. ID NO:2123)  
5'-GGGCCCCCTGGCTCGGCCCCG-3' (FRAG. NO:2113) (SEQ. ID NO:2124)  
5'-GGGCCCCCTGGCTCGGCCCC-3' (FRAG. NO:2114) (SEQ. ID NO:2125)  
5'-GGGCCCCCTGGCTCGGCCC-3' (FRAG. NO:2115) (SEQ. ID NO:2126)  
5'-GGGCCCCCTGGCTCGGCC-3' (FRAG. NO:2116) (SEQ. ID NO:2127)  
5'-GGGCCCCCTGGCTCGGC-3' (FRAG. NO:2117) (SEQ. ID NO:2128)  
5'-GGGCCCCCTGGCTCGG-3' (FRAG. NO:2118) (SEQ. ID NO:2129)  
5'-GGGCCCCCTGGCTCG-3' (FRAG. NO:2119) (SEQ. ID NO:2130)  
5'-GGGCCCCCTGGCTC-3' (FRAG. NO:2120) (SEQ. ID NO:2131)  
5'-GGGCCCCCTGGTC-3' (FRAG. NO:2121) (SEQ. ID NO:2132)  
5'-GGGCCCCCTGGT-3' (FRAG. NO:2122) (SEQ. ID NO:2133)  
5'-GGCCCCCTGGCTCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2123) (SEQ. ID NO:2134)  
5'-GCCCTGGCTCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2124) (SEQ. ID NO:2135)  
5'-CCCTGGCTCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2125) (SEQ. ID NO:2136)  
5'-CCTGGCTCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2126) (SEQ. ID NO:2137)  
5'-CTGGCTCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2127) (SEQ. ID NO:2138)  
5'-CTGGCTCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2128) (SEQ. ID NO:2139)  
5'-TGGCTCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2129) (SEQ. ID NO:2140)  
5'-GGCTCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2130) (SEQ. ID NO:2141)  
5'-GCTCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2131) (SEQ. ID NO:2142)  
5'-CTCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2132) (SEQ. ID NO:2143)  
5'-TCGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2133) (SEQ. ID NO:2144)  
5'-CGGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2134) (SEQ. ID NO:2145)  
5'-GGCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2135) (SEQ. ID NO:2146)  
5'-GCCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2136) (SEQ. ID NO:2147)  
5'-CCCCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2137) (SEQ. ID NO:2148)  
5'-CCCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2138) (SEQ. ID NO:2149)  
5'-CCGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2139) (SEQ. ID NO:2150)  
5'-CGCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2140) (SEQ. ID NO:2151)  
5'-GCGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2141) (SEQ. ID NO:2152)  
5'-CGGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2142) (SEQ. ID NO:2153)  
5'-GGCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2143) (SEQ. ID NO:2154)  
5'-GCCCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2144) (SEQ. ID NO:2155)  
5'-CCCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2145) (SEQ. ID NO:2156)  
5'-CCGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2146) (SEQ. ID NO:2157)  
5'-CGGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2147) (SEQ. ID NO:2158)  
5'-GGCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2148) (SEQ. ID NO:2159)  
5'-GCTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2149) (SEQ. ID NO:2160)  
5'-CTTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2150) (SEQ. ID NO:2161)  
5'-TTGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2151) (SEQ. ID NO:2162)  
5'-TGCCCCCGCCGGCCCCGG-3' (FRAG. NO:2152) (SEQ. ID NO:2163)  
5'-GCCCCCGCCGGCCCCGG-3' (FRAG. NO:2153) (SEQ. ID NO:2164)  
5'-CCCGCCCCGGCCCCGG-3' (FRAG. NO:2154) (SEQ. ID NO:2165)  
5'-CCGCCCCGGCCCCGG-3' (FRAG. NO:2155) (SEQ. ID NO:2166)  
5'-CGCCCCGGCCCCGG-3' (FRAG. NO:2156) (SEQ. ID NO:2167)  
5'-GCCCCGGCCCCGG-3' (FRAG. NO:2157) (SEQ. ID NO:2168)  
5'-GGCGGGGGCGGCGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2158) (SEQ. ID NO:2169)  
5'-GGCGGGGGCGGCGCGCCTGGCTCGCCTBGGGCCC-3' (FRAG. NO:2159) (SEQ. ID NO:2170)  
5'-GGCGGGGGCGGCGCGCCTGGCTCGCCTBGGGCC-3' (FRAG. NO:2160) (SEQ. ID NO:2171)  
5'-GGCGGGGGCGGCGCGCCTGGCTCGCCTBGGG-3' (FRAG. NO:2161) (SEQ. ID NO:2172)  
5'-GGCGGGGGCGGCGCGCCTGGCTCGCCTBGG-3' (FRAG. NO:2162) (SEQ. ID NO:2173)  
5'-GGCGGGGGCGGCGCGCCTGGCTCGCCTBG-3' (FRAG. NO:2163) (SEQ. ID NO:2174)  
5'-GGCGGGGGCGGCGCGCCTGGCTCGCTBG-3' (FRAG. NO:2164) (SEQ. ID NO:2175)



5'-GGCGGGGGCGGCGGCGCCTGGCTCGCCTB-3' (FRAG. NO:2165) (SEQ. ID NO:2176)  
5'-GGCGGGGGCGGCGGCGCCTGGCTCGCCT-3' (FRAG. NO:2166) (SEQ. ID NO:2177)  
5'-GGCGGGGGCGGCGGCGCCTGGCTCGCC-3' (FRAG. NO:2167) (SEQ. ID NO:2178)  
5'-GGCGGGGGCGGCGGCGCCTGGCTCGC-3' (FRAG. NO:2168) (SEQ. ID NO:2179)  
5'-GGCGGGGGCGGCGGCGCCTGGCTCG-3' (FRAG. NO:2169) (SEQ. ID NO:2180)  
5'-GGCGGGGGCGGCGGCGCCTGGCTC-3' (FRAG. NO:2170) (SEQ. ID NO:2181)  
5'-GGCGGGGGCGGCGGCGCCTGGCT-3' (FRAG. NO:2171) (SEQ. ID NO:2082)  
5'-GGCGGGGGCGGCGGCGCCTGGC-3' (FRAG. NO:2172) (SEQ. ID NO:2183)  
5'-GGCGGGGGCGGCGGCGCCTGG-3' (FRAG. NO:2173) (SEQ. ID NO:2184)  
5'-GGCGGGGGCGGCGGCGCCTG-3' (FRAG. NO:2174) (SEQ. ID NO:2185)  
5'-GGCGGGGGCGGCGGCGCCT-3' (FRAG. NO:2175) (SEQ. ID NO:2186)  
5'-GGCGGGGGCGGCGGCGCC-3' (FRAG. NO:2176) (SEQ. ID NO:2187)  
5'-GGCGGGGGCGGCGGCGC-3' (FRAG. NO:2177) (SEQ. ID NO:2188)  
5'-GGCGGGGGCGGCGGCG-3' (FRAG. NO:2178) (SEQ. ID NO:2189)  
5'-GGCGGGGGCGGCGGC-3' (FRAG. NO:2179) (SEQ. ID NO:2190)  
5'-GGCGGGGGCGGCGG-3' (FRAG. NO:2180) (SEQ. ID NO:2191)  
5'-GGCGGGGGCGGCG-3' (FRAG. NO:2181) (SEQ. ID NO:2192)  
5'-GGCGGGGGCGGC-3' (FRAG. NO:2182) (SEQ. ID NO:2193)  
5'-GGCGGGGGCGG-3' (FRAG. NO:2183) (SEQ. ID NO:2194)  
5'-GCGGGGGCGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2184) (SEQ. ID NO:2195)  
5'-CGGGGGCGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2185) (SEQ. ID NO:2196)  
5'-GGGGCGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2186) (SEQ. ID NO:2197)  
5'-GGGGCGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2187) (SEQ. ID NO:2198)  
5'-GGGGCGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2188) (SEQ. ID NO:2199)  
5'-GGCGGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2189) (SEQ. ID NO:2200)  
5'-GCGGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2190) (SEQ. ID NO:2201)  
5'-CGGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2191) (SEQ. ID NO:2202)  
5'-GGCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2192) (SEQ. ID NO:2203)  
5'-GCGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2193) (SEQ. ID NO:2204)  
5'-CGGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2194) (SEQ. ID NO:2205)  
5'-GGCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2195) (SEQ. ID NO:2206)  
5'-GCGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2196) (SEQ. ID NO:2207)  
5'-CGCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2197) (SEQ. ID NO:2208)  
5'-GCCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2198) (SEQ. ID NO:2209)  
5'-CCTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2199) (SEQ. ID NO:2210)  
5'-CTGGCTCGCCTBGGGCCCC-3' (FRAG. NO:2200) (SEQ. ID NO:2211)  
5'-TGCTCGCCTBGGGCCCC-3' (FRAG. NO:2201) (SEQ. ID NO:2212)  
5'-GGCTCGCCTBGGGCCCC-3' (FRAG. NO:2202) (SEQ. ID NO:2213)  
5'-GCTCGCCTBGGGCCCC-3' (FRAG. NO:2203) (SEQ. ID NO:2214)  
5'-CTGCGCCTBGGGCCCC-3' (FRAG. NO:2204) (SEQ. ID NO:2215)  
5'-TCGCTBGGGCCCC-3' (FRAG. NO:2205) (SEQ. ID NO:2216)  
5'-CGCTBGGGCCCC-3' (FRAG. NO:2206) (SEQ. ID NO:2217)  
5'-GCCTBGGGCCCC-3' (FRAG. NO:2207) (SEQ. ID NO:2218)  
5'-CCTBGGGCCCC-3' (FRAG. NO:2208) (SEQ. ID NO:2219)  
5'-CTBGGGCCCC-3' (FRAG. NO:2209) (SEQ. ID NO:2220)  
5'-GGGTGGGCBGCGCGCC-3' (FRAG. NO:2210) (SEQ. ID NO:2221)  
5'-GGTCGGCGBBBGCTCGTCGTGGC-3' (FRAG. NO:2211) (SEQ. ID NO:2222)  
5'-GGTCGGCGBBBGCTCGTCGTGG-3' (FRAG. NO:2212) (SEQ. ID NO:2223)  
5'-GGTCGGCGBBBGCTCGTCGTG-3' (FRAG. NO:2213) (SEQ. ID NO:2224)  
5'-GGTCGGCGBBBGCTCGTCGT-3' (FRAG. NO:2214) (SEQ. ID NO:2225)  
5'-GGTCGGCGBBBGCTCGTCG-3' (FRAG. NO:2215) (SEQ. ID NO:2226)  
5'-GGTCGGCGBBBGCTCGTC-3' (FRAG. NO:2216) (SEQ. ID NO:2227)  
5'-GGTCGGCGBBBGCTCGT-3' (FRAG. NO:2217) (SEQ. ID NO:2228)  
5'-GGTCGGCGBBBGCTCG-3' (FRAG. NO:2218) (SEQ. ID NO:2229)  
5'-GGTCGGCGBBBGCTC-3' (FRAG. NO:2219) (SEQ. ID NO:2230)  
5'-GGTCGGCGBBBGCT-3' (FRAG. NO:2220) (SEQ. ID NO:2231)  
5'-GGTCGGCGBBBG-3' (FRAG. NO:2221) (SEQ. ID NO:2232)  
5'-GGTCGGCGBBBG-3' (FRAG. NO:2222) (SEQ. ID NO:2233)  
5'-GGTCGGCGBBG-3' (FRAG. NO:2223) (SEQ. ID NO:2234)  
5'-GGTCGGCGBB-3' (FRAG. NO:2224) (SEQ. ID NO:2235)  
5'-GTCGGCGBBBGCTCGTCGTGGC-3' (FRAG. NO:2225) (SEQ. ID NO:2236)  
5'-TCGGCGBBBGCTCGTCGTGGC-3' (FRAG. NO:2226) (SEQ. ID NO:2237)  
5'-CGGCGBBBGCTCGTCGTGGC-3' (FRAG. NO:2227) (SEQ. ID NO:2238)  
5'-GGCGBBBGCTCGTCGTGGC-3' (FRAG. NO:2228) (SEQ. ID NO:2239)  
5'-GCGBBBGCTCGTCGTGGC-3' (FRAG. NO:2229) (SEQ. ID NO:2240)

EPI-109

225

5'-CGBBGBGCTCGTCGTGGC-3' (FRAG. NO:2230) (SEQ. ID NO:2241)  
5'-GBBGBGCTCGTCGTGGC-3' (FRAG. NO:2231) (SEQ. ID NO:2242)  
5'-BBBGBGCTCGTCGTGGC-3' (FRAG. NO:2232) (SEQ. ID NO:2243)  
5'-BGBGBGCTCGTCGTGGC-3' (FRAG. NO:2233) (SEQ. ID NO:2244)  
5'-GBGGBGCTCGTCGTGGC-3' (FRAG. NO:2234) (SEQ. ID NO:2245)  
5'-BGCTCGTCGTGGC-3' (FRAG. NO:2235) (SEQ. ID NO:2246)  
5'-GCTCGTCGTGGC-3' (FRAG. NO:2236) (SEQ. ID NO:2247)  
5'-CTCGTCGTGGC-3' (FRAG. NO:2237) (SEQ. ID NO:2248)  
5'-TCGTCTGTGGC-3' (FRAG. NO:2238) (SEQ. ID NO:2249)  
5'-GGGGCCCCCGCGCCCGCC-3' (FRAG. NO:2239) (SEQ. ID NO:2250)  
5'-GGGGCCCCCGCGCCCGCC-3' (FRAG. NO:2240) (SEQ. ID NO:2251)  
5'-GGGGCCCCCGCGCCCGCC-3' (FRAG. NO:2241) (SEQ. ID NO:2252)  
5'-GGGGCCCCCGCGCCCGCC-3' (FRAG. NO:2242) (SEQ. ID NO:2253)  
5'-GGGGCCCCCGCGCCCGCC-3' (FRAG. NO:2243) (SEQ. ID NO:2254)  
5'-GGGGCCCCCGCGCCCGCC-3' (FRAG. NO:2244) (SEQ. ID NO:2255)  
5'-GGGGCCCCCGCGCCCGCC-3' (FRAG. NO:2245) (SEQ. ID NO:2256)  
5'-GGGGCCCCCGCGCC-3' (FRAG. NO:2246) (SEQ. ID NO:2257)  
5'-GGGGCCCCCGCGC-3' (FRAG. NO:2247) (SEQ. ID NO:2258)  
5'-GGGGCCCCCGCGCCCGCC-3' (FRAG. NO:2248) (SEQ. ID NO:2259)  
5'-GGCCCCCGCGCCCGCC-3' (FRAG. NO:2249) (SEQ. ID NO:2260)  
5'-GCCCCCGCGCCCGCC-3' (FRAG. NO:2250) (SEQ. ID NO:2261)  
5'-CCCCCGCGCCCGCC-3' (FRAG. NO:2251) (SEQ. ID NO:2262)  
5'-CCCGCGCCCGCC-3' (FRAG. NO:2252) (SEQ. ID NO:2263)  
5'-CCGCGCCCGCC-3' (FRAG. NO:2253) (SEQ. ID NO:2264)  
5'-CGCGCCCGCC-3' (FRAG. NO:2254) (SEQ. ID NO:2265)  
5'-GCGCCCGCC-3' (FRAG. NO:2255) (SEQ. ID NO:2266)  
5'-CGCCCGCC-3' (FRAG. NO:2256) (SEQ. ID NO:2267)  
5'-GCCCGCC-3' (FRAG. NO:2257) (SEQ. ID NO:2268)  
5'-GGGGCGCGGGGCGCCGG-3' (FRAG. NO:2258) (SEQ. ID NO:2269)  
5'-GGCGGGGCGCGGGGCGCC-3' (FRAG. NO:2259) (SEQ. ID NO:2270)  
5'-GGCGCGTCGCGCGCCCGCTCGGCG-3' (FRAG. NO:2260) (SEQ. ID NO:2271)  
5'-GCGCGGCBBCGCGCGGGCGCG-3' (FRAG. NO:2261) (SEQ. ID NO:2272)  
5'-GCGCBGCGGCGCCCTGCGCGGC-3' (FRAG. NO:2262) (SEQ. ID NO:2273)  
5'-GGGCGGGTGGGCTGCCCTGCGCGCC-3' (FRAG. NO:2263) (SEQ. ID NO:2274)  
5'-GGGCTGCTGCGCGCGGCTCCGCGA-3' (FRAG. NO:2264) (SEQ. ID NO:2275)  
5'-CTCCGGGCGGGCGGGCGCGGG-3' (FRAG. NO:2265) (SEQ. ID NO:2276)  
5'-GGGCTGCCGCGTCCGGGCCCCCTTGGCGCG-3' (FRAG. NO:2266) (SEQ. ID NO:2277)  
5'-GCGCTCGCGCGCTGCCGG-3' (FRAG. NO:2267) (SEQ. ID NO:2278)  
5'-GCGCGCTTGGCTTGTGCGGC-3' (FRAG. NO:2268) (SEQ. ID NO:2279)  
5'-GCTGCTCCBCGCGCTGG-3' (FRAG. NO:2269) (SEQ. ID NO:2280)  
5'-GCCGGBGGCGGCGCGGTCCGCG-3' (FRAG. NO:2270) (SEQ. ID NO:2281)  
5'-CCCGCGGCGGCGGCGGCGGCTGGG-3' (FRAG. NO:2271) (SEQ. ID NO:2282)  
5'-GTCTCTCCGCCCCGCGCGCG-3' (FRAG. NO:2272) (SEQ. ID NO:2283)  
5'-GGGCGTCCGCTCCGGGCGTGGG-3' (FRAG. NO:2273) (SEQ. ID NO:2284)  
5'-GCGGGACGCGGCGGCTCTGGCGTGGC-3' (FRAG. NO:2274) (SEQ. ID NO:2285)

**Bradykinin Receptor Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-GGTBCBTTG BGCBTGTCGG CGCGGTCCCG TTBBGBGTGG GCCCGCCAGC CCAGCCACTC CACTTGGGGG CGGGTGGCCA  
GCACGAACAG CACCCAGAGG AAGGGGGGCG GCCCAGAAGG GCAGCCCGCA GGCCAGGATC AGGTCTGCTG  
CGGCCGGAGA TAATGGCATT CACCACGCGG CGGCCAGCG CAGCCGCGC ATCCGGCCCC GGTCTGACC TGCAGCCCC  
GTCTCCTTGG CATTCCTGGG CCCCAGTCAC TCCTCTCCCT GCCCCCTTG CTGGGCGAGG GACGGGGTG BCBTTGBGCB  
TGTCGGCGCG GTCCGTTBB GBGTGGGCCC GCCAGCCAG CCACTCCACT TGGGGGCGGG TGGCCAGCAC GAACAGCACC  
CAGAGGAAGG GGGGCGGCCC AGAAGGCGAG CCCGAGGCC AGGATCAGGT CTGCTCGGC CGGAGATAAT GGCATTACCC  
ACGCGGCGGC CCAGCGCAGC CCGCGCATCC GGCCCGGTT CTGACCTGCA GCCCCGTCT CTTGGCATT CTTGGGCCCC  
AGTCACTCT CTCCCTGCCC CCCTTGCTGG GGCAGGGACG GCCGTGTTGT CBGTGGTGCT GCCCGTTTGB GGTBTGGCGC  
TCCBCCBBTT CCCTTTTCTC TTGTTTTCC GTTCTCTTG CCGTCTGTGG TT CAGATTACA AACTGCAGGA CTGGGCGAGG  
AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGC  
CAGGAATGCC AAGAGACAT CTATGCACGA CTTGGGAAA TTGATTGATG TCTCCGGTAA AACACGGGAG ACTAATTCCT  
GCCCTGCCA ATTTTGAGG GAGCATGGCT GTGAGGATGG GGTGAATCA CGCACAGCCA AGGACTCCAA AATACAACA  
GCATTACTGT TCTATTGTC TGCCACACCT GAGCCAGCCT GTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGGAGGGAGA  
GGAGTGACTG AGCTTCCCTC CCGTGTGTT TCGTCCCTG CCCCAGCAAG ACACTTAGA TCTCCAGGAG AACTGCCATC  
CAGCTTTGGT GCAATGGCTG AGTGACAAG TGAGTTGTTG CCCTGGGTTT CTTAATCTA TTCAGCTAGA ACTTTGAAGG  
ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCT  
CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA TTGAGCACTT GTGTATATG CAGTATTGAG  
CACTGTAGGC AAGACCAAAG AAAGAGAAGG AGCCATCTCC ATCTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG  
CACTGCCACC ACCAGAAAGC TGTCGACGA GACGGTCGAG CAGGCTGCTG TGGGTGATAT GGACAGCAGA AGGGGAGAC  
CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACT GTCCCTGCCT CAGTCCCTT TTATGTAACA TGAAGTCGT

GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA  
GACGTAAGTGG GATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG  
AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCACCAC  
CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTGT GATGAGGCAG  
AGGAAGATAT TTCTAATCGG TCTTGCCCAG AGGATCACAG TGCTGAGACC CCCACCACC AGCCGGTACC TGGGAAGGGG  
GAGAGTGCAG GCCTGCTCAG GGAAGTGTCC TGTCTCAGCA ACCAAGGGAT TGTTCTGTG AATCAATGGT TTATTGGAAG  
GTGGCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG CAAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA  
TTCATTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG  
AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG  
CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA  
ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT GGAGGGCTGG AATCTGGAGA GCTAGAACCT  
GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA  
GGGCTAGAAC CTGGAGGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC TAGAACCTGT AGAGCTAGAA CATGGAGAGC  
TAGAACCCGG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG AGGAATGAA CCTGGAGGGC TAGAACCTGG AGAAGCTAGAA  
AAATTTACAT GGCAAAGAGC CCATAAATCC TGACCAATCC AACTCTGAAT TTAAAGCAA AAGCGTGAAA AAAAAGATT  
CCTCCTTACC CCAACCCAC TCTTTTTCC CACCACCCAC TCTCTCTGC CTCAGTAAGT ATCTGGAGGA AGAAAACAGG  
TGAAAAGAAGA AGTAAAAACC ATTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAA  
AAAAAGAGC TGTGTTTTGT CACACAGGGC AGTCATTGAG CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG  
AGCTCTGCCC CAATGGCCAT GTGGGGATCC ACACCTGGTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG  
CATGGTGTAG ATGCCCTGAT AAAGAACATC TGTCCTGTGA AAGACTCAAT GAGCTGTTAT GTTGTAACA GGAAGCATTT  
CACATCCAAA CGAGAAAATC ATGTAAACAT GTGTCTTTTC TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAA  
AAAAAATAA AAATGATAGA CCGTCAATAA TTTGTAAAT GCTTTTTAAA ATGAATGCTT TAAGCCGGGT GCAGTGCCTC  
ACATCTGTAA TCCCAGCACT TTGGAGCCGA GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG  
GCAAAACCTC ACTCTCTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCCAGC TACTCAGGAG  
GCTGAGACAG GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT  
GACAGAGAGA GACTCCGTCT CAAAAAATAA AAAAAAATAA AAAAAATAC GCTTCAAAAC CATGATCTCT CACCATTGTT  
GAATTTTCTT TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCTT TTCCCTCTGC AAATCCCTG  
CCTTGAAGGT TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTTGCAAGTG TCCAAACCCT GATCCCAGCT GTGCTTAGGG  
GTTCCTGCAA ACCTTTTCCA GGTGTTAATT ACCTCCCACT TCATTTCTG TTTACCAACT CAGCTTTTGT TTTAGTGTG  
TTTGAATTCC CTGAAGTAC CGTTGTCTGA TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT  
GCCGGGTGTT GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCTATG ACACACACAC ACCACATAC  
CCACACATGC ACACACACAC ACACACCCGC ACTCACACAG TGGACATGC ATAGACCACA GCTTCCACA CCCTCTAG  
ACAGGGGTCA CTTGGTATCC TGGAGAGAGT GTGAAGTCTT GGAATGGAAG GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT  
GGGACTGAGA CAAGTCACCA CCAACCCATC TGCGCCTGT TTACCTCTC TGTGAGGCAA GCACAGAGCC CATGCCTGCC  
CCCCTGGATG GGAGTGATGT GAAACTTGAA GGGCGGTGAG AGCAAGGGTC GGAATGGAAG GGCCCTTGGG AAAAAAGGCC  
CTTTCAACTA GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTGTGAATTG GTAAGCCAAG CCCGAAGGGA  
CTGGAATATC TCAGATGTGT CTGTCTCCCT TATTAGGTTT AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT  
CCAGACCCCT CCTCTGAGCT CCAGACCCCT GCGTGGGCAA CAGCCCTAT GGGGTGCGAT CCCCACCTGC CTGGAATTCT  
CCAAAGAACC TCCCCTTTAA CAGTTCCAGC CTTTAACAGT TCCAGTCTAA ACACATGACC TTTCTCTCT AAATCAGCCC  
CCCATCTCTG CTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGCTCTACC CCATCCATGT CCAATCAAGC  
ACTAGGCATG TCAGGTTTAC CCTCTAACT CCTCTGGAAT CCAGTCTCTC AGTCTCCATC ATCCCAGGTG GAAGCTAATG  
GGCTAACTGG TCCTTGCTTC CACTCTACCC CCACTGCAGT CTTGACTTCC TGAGCAGCAC CCAGGGCCTA ATCGATATTC  
ACACCAAGCG CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC ACCCTGTTA GTTCTGCTCA CCCTCAGTGT  
TCTCATCAAT AATCCACTCC CCTCACAGGC GCGTTTGGGA CCCCATTGTC TATGCTCTCA CAGGACCTTT TGCTTGATT  
TTCATGTAC TTAGGTCAGT TTGCAGTTAT TAAGTGACTG AGCAATGTCT GGCTTCTCCA GTAGACTGTC AGCTCTAGC  
CATTGTATAC CTAGCAGGC TGTGTGGGAG CACGTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGTCT CCATTTCTCC  
GCCCTGCTGG AGAATGCGTG TATTTGGCAA TCCCCAGCCC CTGTGCCATC TAACCATCTT TTCTCTCTG TTCAGCCCAG  
GTGTGGCCTC ACTCACATCC CACTCTGAGT CCAATGTTT TCTCCCTGGA AGATATCAAT GTTCTGTCT GTTCGTGAGG  
ACTCCGTGCC CACCAAGGCC TCTTTCAGGT GAGTCAAAGG GATTCTCTAG TTTACTAGTT AGGGGAGGTG GGCAGACACC  
CTGGAGAAGT CCCTGGAAAG CTCAACTCTC ATGCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCGCAAAGAC  
AAAACCTCTC AGGTGTCCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGCTC  
AGGGAGGAGA AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACTTG GAAGTGAAGG GAAGAGAGTT  
AAACATTTAA GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC CTGGAACA AAATATCTCC AACACATGGC  
TGACATTTGG TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC  
AGAGATAGG GAGATCTGTT CTGAGGGACA GCATTTGAAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG  
CTGCAGGTGC TGCTATGAT GAAGATGAGC AGATGGCCAT CTCAGTGGG GCCACAGTG ACTGGACCTA TAGTTTCCAA  
TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGGCC AGGGATGGGC CAGGATCCAT CCCCCTGGCT  
ACTGTCTTGC TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG  
ACTCTCCAAG CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC  
CCAGGGGAAG TCTTACCTC AGAGGACTCT GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA  
GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC  
GTAAGTGGG CAGAGGATC CACTTTCAAG GTGGCAAGTT GTTTCCTCC ATGTGGCTGC TTGAGTATCC TCAGATGGC  
GCTCACATCC TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCTC CAGAATACAC  
ACACCATCCC TGCCACCATT AGTAAGAAAGT CCAGCCCAGC TCCAGGAGAA GAGGAAGCAG ATTCCTCTT TTGAAATGAA  
GAATATCAAG TAATTGGGG GGCATATGAA AGCCACCACA CACCACAGGG ATCTTTTGTAG AGCATACTTC TTATACCATC  
ACTGTAGTTC CTTAAGACTC AGGGGCAAG CCTCACTTCC TTAGCACCCA GTGAAGACCA CGCTTACTCC CTCACTCAAC  
CTCTGTCTAC TTCCACCTC TCTGTCCAA CATCTAGTGT CACTTTCCAG AACATACCAA CAGCTTCCC AGTCTGTGTC  
CTCTGTCTAG GCTGTTCCC CTGCTGGTC CACTTGTCTT CTTCTGTGTC CGGTCAAAAT GCTTCTTATC CTTCAGAGC  
CAGCTCTAGA GTCACCTCCA ACCCTTACC CACCAGCCCC CTCTCCAAGT CTGTGTCCCA CAACCCCTCT GCTCCCTCA

GGGCACCCTC CACCCTCTGG GCCACAGTTG TCAGGAGTCA GGCAGGGCAG GGGCCGGGTG GTGTCTTCTT TGTGTTCTTG  
CACTCAGGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCCAG  
TCTGGCTCCA GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTTTTC CTGGGAAATC CCAGAGGTGA TGATCAGTAA  
TCTCTCCCGT GACTCGTAGT TCAGCTCTTC CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC CCCTTTTCCT  
TCTCTACCC ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCCTGCC TCTGGGTTGT GCTTTGGACT TTTTCAAGTG  
TCTCGCATCC ACTCTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC  
CTACTCCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAATCA  
TGGCTGTCCA AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCCTATGGT  
CTGTGAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC  
CACTGATAAT AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGCATT TGCACATTGT  
CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT  
TAAGTAACCT CCCAGCGTG ACACGGCTTA TAAGTAAGG AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAG  
TCCCCACCC CTCTGCCATC TGTATCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACCGAAAG CACGATGCCA  
CAGACTGTCC AGGAAGACAG AACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGAATCTCC AGGTCTGGAA  
TGATATCATT TTTCTTTTT AATAAATTA CTCACCCACC ACACGGCTTT GAGAGGCTCA AAGTTGACCA ACTCCCTTGG  
GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCTCCCA TCACGGAAGC TCAAGGAGG TCAAGGGTCC AACACTTGAG  
ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAATATGAG GCCCCCGTT  
AGAACCAAGG ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG  
AGCTCCACTC CGGCTTCTCC TTGTCTGTC TGGTTGCTCT TAACCCCTGT CTCCTTCTGG ACCAGTTTGT GTCTTCCCT  
TGTGACCGCT GAGGGGTAAC AGCCTCTTTC CACTTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCACT  
CTTAACGGGA CTTTGGCCA GAGCAAATGC CCCCAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCT  
CTGGGTGCTG TTCGTGCTGG CCACCCTAGA GAACATCTTT GTCCTCAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGG  
TGGCAGAGAT CTACCTGGGG AACCTGGCCG CAGCAGACT GATCCTGGCC TGCGGGCTGC CTTCTGGGC CATCACCATC  
TCCAACAAC TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG  
CATCTGTTTC CTGATGCTGG TGAGCATCGA CCGTACCTG GCCCTGGTGA AAACCATGTC CATGGGCGG GTGCGGGCG  
TGCGTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGTG TACGCTGCTC CTGAGCTCAG CCATGCTGGT GTTCCGGACC  
ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC  
CAACATGCTC CTGAATGTCG TGGGCTTCT GTCGCCCTG AGTGTCTATC CTTCTGCAC GATGCAGATC ATGCAGGTGC  
TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAG GGAGAGGAGG GCCACGGTGC TAGTCTGGT TGTGCTGCTG  
CTATTCATCA TCTGCTGGCT GCCCTCCAG ATCAGCACTC TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG  
CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGACTCGC TCCTTATGAG CCTACAGCAA CAGCTGCCCTC AACCCACTGG  
TGTACGTGAT CTGGGGCAAG CGCTTCCGAA AGAAGTCTGT GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG  
TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCGCTGGAA CGCCAGATTC ACAAACCTGCA  
GGACTGGGA GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTA ATTTGTGTA GGATTGAGG ACAGTTGCTT  
TTCAGCATGG GCCCAGGAAT GCCAAGGAGA CATCTATGCA CGACCTGGG AAATGAGTTG ATGTCTCCGG TAAACACCG  
GAGACTAAT CTGCCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC  
CAAAATCACA ACAGCATTAC TGTTCTTATT TGCTGCCACA CTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCTC  
GGGGGCGAGG AGAGGATGA CTGAGCTTCC CTCCCGTGT TCTCCGTC CTGCCCCAGC AAGAGAACT ATGATCCAG  
GAGAACTGCC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT  
AGAACTTTGA AGGACAATTT CTGCAATTA TAAAGGTTAA GCCCTGAGG GTCCCTGATA ACAACCTGGA GACCAGGATT  
TTATGGCTCC CTCACCTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTGCTGTAT  
ATGCAGTATT GAGCACTGTA GGCAAGAGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAA AGACTCAAGT  
GGGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTTGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC  
AGAAGGGGA GCCAGTTCC AGCTACCAA TACTATTGCA CACCACCTG CTGCTCCTC GCCCTTCAA GATGAGCTGT  
TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGA CGGTGGTGAC GGTGGGGACA TCAGGCTGCC  
CCGCACTACC AGGGAGCGAC TGAAGTGCCC ATGCCGTTG CTCCGAGAA GGTGGGTGCC GGGCAGGGG TGCTCCAGCC  
GCCTCACCTC TGCTGGGAGG ACAAACCTGTC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG  
TGGTCTGGG GAGTT GAGCTCTTCA ATATTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA  
CACACCTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC AGGAACTCC  
AGTAAAGGA GCCCAATGT GGTGAACAG CCAGGTGCAC AGATGAGTCA ACCACAGC CAGGCCAGG AGGCCCTTCA  
CTAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGCTA CGGCCAGGC ACCCATAAAC TGATCTGAGA CTCTGTTTCC  
CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG  
ATGGGCTGGG GGGACGTCCT CTGGCCCTCC TGTCTCTCC CCAGATCCAC TGGGCCCACT CTATCTGTT CTCTTCTGAA  
GGAAGGGTTT TAAGGCTTCA AAAAAAATG TTTTGAAAGT CCCTGCCCTT TCCAGCTCCT ACCGTCTCAG CCCTGGGAGT  
GTAAAGTGCT GCAGATAGTT AGTAAGTCTT TGAGCAAAA TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC  
GCCATACAT TCCGAAGAAA CGGCCGCGTG TCTCAGGGA GCGCAACAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC  
ACTGTCCGCC TGGGAGCCG TACGTGGCAT GACAAAGAAA TCCAGGACT CCGCCTGCC ACCTGGCCAC CTTCTGTTA  
CACCTTCCGC GTAAACGCC ACTGTTTACA TCCAAACTC AGACACAAAA TAACCACCTC AAGAAGATAA ATAATGATAA  
GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGG TTCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTTT  
GCCGTCCAC GACTCCAACG GGCAGCCGGG CCTACGCAA CATGGAATC TTCCAAGAGC CTCCTGGCC CCCAGGGCTC  
AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT  
GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT  
CCCGGCCCA CTCAGCTCT GGCTTCTGG CTCCAGGAG GGTGGTGAC GGTGGTGACG GTGGGACAT CAGGCTGCC  
CGCAGTACA GGGAGCGACT GAAGTGCCCA TGCCCTTG CTCCGAGGAG GTGGGTGCC GGCAGGGCT GCTCCAGCCG  
CCTCACCTCT GCTGGGAGGA CAACTGTCC CAGCACAGAG GGAGGGAGG AGGGCAGGCA GCGGGGAGAA GTTTCCTGT  
GGTCTGGGG AGTTGGGAAA AGTTCCCTT CTCCGAGG GAGG CAGATTCACA AACTGCAGGA CTGGGCAGGG  
AGCAGACAGT GAGCAACGC CAGCAGGGCT GCTGTGAATT TGTGAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC  
CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT  
GCCCTGCCA ATTTGTCAGG GAGCATGGCT GTGAGGATGG GGTGAATCA CGCACAGCCA AGGACTCCAA AATCACAACA

GCATTACTGT TCTTATTGTC TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG GGGAGGGAGA  
GGAGTGACTG AGCTTCCCTC CCGTGTGTTT TCCGTCCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC  
CAGCTTTGGT GCAATGGCTG AGTGACACAAG TGAGTTGTTG CCTGGGTTT CTTAATCTA TTCAGCTAGA ACTTTGAAGG  
ACAATTTCTT GCATTAATAA AGGTAAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCCT  
CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA TAAGCACATA TTGAGCACTT GCTGTATATG CAGTATTGAG  
CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG  
CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCCAG CAGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC  
CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACT GTCCCTGCCT CAGTTCCTT TTATGTAACA TGAAGTCGTT  
GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA  
GACGTAACCTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG  
AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCACCAC  
CCTGAGGGCC ACACGCCAC ACACACACAG GCATTGAGG AGAAGGCCAT GTCTTCAAAG TCTGATTTG GATGAGGCG  
AGGAAGATAT TTCTAATCGG TCTTGCCAG AGGATACAG TGCTGAGACC CCCCACCACC AGCCGGTACC TGGGAAGGGG  
GAGAGTGACG GCCTGCTCAG GGAAGTGTCC TGCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG  
GTGGCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA  
TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG  
AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG  
CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA  
ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGT GGAGGGCTGG AATCTGGAGA GCTAGAACCT  
GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA  
GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC TAGAACCTGT AGAGCTAGAA CATGGAGAGC  
TAGAACCCGG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG AGGAATGAA CCTGGAGGGC TAGAACCTGG AGAATGAGAA  
AAATTTACAT GGCAAAGAGC CCATAAATCC TGACCAATCC AACTCTGAAT TTTAAAGCAA AAGCGTGAAG AAAAAGATT  
CTCCTTACC CCAACCCAC TCTTTTCC CACCACCCAC TCTCCTCTGC CTCAGTAAGT ATCTGGAGGA AGAAAAACAGG  
TGAAAGAACTG AGTAAAAAACC ATTTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAGG  
AAAAAGAGGC TGTGTTTTGT CACACAGGGC AGTCATTGAG CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG  
AGCTCTGCCG CAATGGCCAT GTGGGGATCC ACACCTGGTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG  
CATGGGTAG ATGCCCTGAT AAAGAACATC TGCTCTGTA AAGACTCAAT GAGCTGTTAT GTGTAAACA GGAAGCATT  
CACATCCAAA CGAGAAAATC ATGTAAACAT GTGTCTTTC TGAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAG  
AAAAAAGGAA AAATGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTAAAT ATGAATGCTT TAAGCCGGGT GCAGTGCCCT  
ACATCTGATA TCCAGCACT TTGGAGCCGA GCGGTGGGAT TGTGTAGGT CAGGAGTTCG AGACCAACCT GGCCAACTC  
GCAAAACCTC ACTCTCTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCAGC TACTCAGGAG  
GCTGAGACAG GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT  
GACAGAGAGA GACTCCGTCT CAAAAAAGAA AAAAAAATTAC GCTTCAAACA CATGATCTCT CACCACTGTT  
GAATTTTCT TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCT AGGTCTTCTT TTCCCTCTGC AAACCTCCTG  
CCTTGAAAGT TCAGAAGGAC TGTGCGTGCT CGTTGACATC TTTGCAAGTG TCCAAACCTG GATCCAGCT GTGCTTAGGG  
GTTCTGTCAA ACCTTTTCCA GGTGTTAATT ACCTCCCACT TCATTCTCTG TTTACCAACT CAGCTTTTGT TTTTAGTGTG  
TTTGAATTCC CTGAAGTAC CGTTGTCTGA TCTCCACCTC CCAATGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT  
GCCGGGTGTT GCAGAGTGGC TGAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACAC ACCCACATAC  
CCACACATGC ACACACACAC ACACACCCGC ACTCACACAC TTGGACATGC ATAGACCACA GTTTCCACA CCCTCTCTAG  
ACAGGGGTCA CTTGGTATCC TGGAGAGAGT GTGAAGTCTT GGAATGGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT  
GGGACTGAGA CAAGTACCA CCAACCCATC TGGCCTTGT TTAACCTCTC TGTGAGGCAA GCACAGAGCC CATGCTGCCC  
CCCCGTGATG GGAGTGATGT GAAACTTGAA GGGCGGTGAG AGCAAGGGTC GGGAAATGGAA GGCCTTGGG AAAAAAGGCC  
CTTTCAACTA GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTTGTAATTG GTAAGCCAAAG CCCGAAGGGA  
CTGGAATAC TCAGATGTGT CTGTCTCCTT TATTAGGTTT AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT  
CCAGACCCCT CTTCTGAGCT CCAGACCCCTG CTGGACCCAA CCAGCCCTAT GGGGTGCGAT CCCCACCTGC CTGGAATTCT  
CCAAAGAACC TCCCTTTAA CAGTCCAGC CTTAACAGT TCCAGTCTAA ACACATGACC TTCTCCTCT AAATCAGCCC  
CCCCTCTG CTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGCTCTCACC CCATCCATGT CCAATCAAGC  
ACTAGGCATG TCAGGTTTAC CCTCTAACT CCTCTGAAAT CAGTCTCTC AGTCTCCATC ATCCAGGTC GAAGCTAATG  
GGCTAACTGG TCCTTGCTTC CACTCTACCC CCACTGCAAT CCGTACTTC TGAGCAGCAG CAGGGGCTA CTGATATT  
ACACCAAGCG CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC ACCCTGTTTA GTTCTGCTCA CCCTCAGTGT  
TCTCATCAAT AATCCACTCC CTCACAGGC GCGTTTGGGA CCCCATGTTT TATGCTCTCA CAGGACCTTT TGCTTGATTT  
TTCACTGTAC TTAGGTCAGT TTGAGTTAT TAAGTGAAGT AGCAATGTCT GGCTCTCCA GTAGACTGTC AGCTCCTAGC  
CATTGTATAC CTAGACCCGC TGTGTGGGAG CAGGTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGCTCT CCATTTCTCC  
GCCCTGCTGG AGAATGCGTG TATTGGGCAA TCCCGAGCCC CTGTGCCATC TAACCATCTT TTCTCTCTG TTCAGCCAG  
GTGTGGCCTC ACTCACATCC CACTCTGAGT CCAAAATGTT TCTCCCTGGA AGATATCAAT GTTCTGTCT GTTCTGTAGG  
ACTCCGTGCC CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCTCTAG TCACTAGTT AGGGGAGGTG GGCAGACACC  
CTGGAGAACT CCTGGAAAG CTCAACTCTC ATGCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCCCAAAGAC  
AAAACCTCTC AGGTGTCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC  
AGGGAGGAGA AGGGCACATT CTTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACCTG GAAGTGAAGG GAAGAGAGTT  
AAACATTAAA GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC CTTGGAACAA AAATATCTCC AACACATGGC  
TGACATTTGG TGGGAGATCA GAACACCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GAGTAGAAGC  
AGAGGATAGG GAGATCTGTT CTGGGGACA GCATTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG  
CTGCAGGTGC TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCCAA  
TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGG CAGGATCCAT CCCCTGGCT  
ACTGTCTTGC TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG  
ACTCTCCAAG CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC  
CCAGGGGAAG TCTTACCTTC AGAGGACTCT GGAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA  
GACAGCTTAT CTCTGTTCCA AGAGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCCAGGAG CACCAAAAGC

GTAAC TGGGG CCAGAGGATC CACTTTCAAG GTGGCAAGTT GGTTC CCCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG  
GCTCACATCC TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC  
ACACCATCCC TGCCACCATT AGTAAGAACT CCAGCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT TTGAAATGAA  
GAATATCAAG TAATTCGGGG GGCATATGAA AGCCACCACA CACCACAGG ATCTTTT TAGCATACTTC TTATACCATC  
ACTGTAGTTC CTTAAGACTC AGGGGCAAAG CCTCACTTCC TTAGCACCCA GTGAAGACCA CGCTTACTCC CTCACCTAAC  
CTCTGTCTAC TTCCACCTC TCCTGTCCAA CATCTAGTGT CACTTTCCAG AACATACCAA CAGCTTCCCC AGTTCTGTGC  
CTCTGCTCAG GCTGTTCCCC CTGCTGGTGC CACTGTCTCT CTTCTTGTG CCGTCAAAAT GCTTCTTATC CTTCAAGACC  
CAGCTCTAGA GTACCTCCA ACCCTTACC CACCAGCCCC CTCTCCAAGT CTGTGTCCCA CAACCCCCCT GCTCCCTCCA  
GGGCACCTC CACCCTCTGG GCCACAGTTG TCAGGAGTCA GGCAGGGCAG GGGCCGGGTG GTGTCTCTT TGTGTTCTTG  
CACTCAGGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAAA ACATTAAAG GATAGAAGCA TTGATTGTG GGTCCCCCAG  
TCTGGCTCCA GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTTTTC CTGGGAAATC CCAGAGGTGA TGATCAGTAA  
TCTCTCCCGT GACTCGTAGT TCAGCTCTTC CTCCATGAGC CTGACTATCA GTGGACCTC CAGAAAGAGC CCCTTTTCT  
TCTCTACCC ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCTGCCC TCTGGGTTGT GCTTTGGACT TTTCAGTGTG  
TCTCGCATCC ACTCTCAAC TTGAATGTTG CAACAGCCAT GAAAAAGAA ATGCAAAAGC ATTCAAGATG AGAGCAATAC  
CCTACTCCA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAACTCA  
TGGCTGTCCA AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCTT GCCCTATGGT  
CTGTGAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGTGGGTGT TGGAGTTTAC  
CACTGATAAT AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGCATT TGCACATTGT  
CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTTAA CTGCCATGT ACAGGTGAGG TCATTGTGGT TCAAGGACGT  
TAAGTAACTT CCCCAGCGTG ACACGGCTTA TAAGTAAAGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAA  
TCCCCACCCC CCTCGCCATC TGTATCCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA  
CAGACTGTCC AGGAAGACAG AACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGAATCTCC AGGTCTGGAA  
TGATATCATT TTTCTCTTTT AATAAATTAA CTCACCCACC ACACGGCTT GAGAGGCTCA AAGTTGACCA ACTCCCTTG  
GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCCTCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC AACACTTGAG  
ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATC CCACTGGAGC CTCGAGATGA AGAATATGAG GCCCCGTTT  
AGAAGCAAGC ATCAGAGGGG GCTCTGTAAG ACCAGGGGA GTACAGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCTG  
AGCTCCACCT CGGCTTCTCC TTGTCTGGC TGGTTGTCTT TAACCCCTGT CTCCTTCTGG ACCAGTTTCT GCTCTCCCT  
TGTGACCGCT GAGGGGTAAC AGCCTCTTTC CACTTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT  
CTTAACGGGA CTTTGCCCA GAGCAAATGC CCCCAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCT  
CTGGGTGCTG TCGTGTCTGG CCACCTAGA GAACATCTTT GTCTCTAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGG  
TGGCAGAGAT CTACCTGGGG AACCTGGCCG CAGCAGACCT GATCTGGCC TGCGGGCTGC CTTCTGGGC CATCACCATC  
TCCAACCAAG TCGACTGGCT CTTGGGGAG AGCTCTGCC GCGTGGTGAA TGCCATTAT TCCATGAACC TGTACAGCAG  
CATCTGTTTC CTGATGCTGG TGAGCATCGA CCGCTACCTG GCGTGGTGAA AAACCATGTC CATGGGCGCG ATGCGCGCG  
TGCGCTGGG CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC  
ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC  
CAACATGCTC CTGAATGTCG TGGGCTTCTT GCTGCCCTG AGTGTATCA CTTCTGCAC GATGCAGATC ATGCAGGTGC  
TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCTGGT TGTGCTGCTG  
CTATTCTCA TCTGTGGCT GCCCTTCCAG ATCAGCACCT TCTTGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG  
CCAGGACGAG CGCATCTCG ATGTAATCAC ACAGATCGCC TCTTCTATG CCTACAGCAA CAGCTGCCTC AACCCATGG  
TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG  
TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTC ACAAACCTGCA  
GGACTGGGCA GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTA GGATTGAGG ACAGTTGCTT  
TTCAGCATGG GCCCAGGAAT GCAAGGAGA CATCTATGCA CGACCTTGGG AAATGAGTTG ATGTCTCCG TAAACACCG  
GAGACTAATT CCTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC  
CAAAATCACA ACAGCAATTAC TGTCTTATT TGTGCCACA CTTGAGCCAG CTGCTCCTT CCCAGGAGTG GAGGAGGCT  
GGGGGCGAGG AGAGGAGTGA CTGAGCTTCC CTCCGTTGT TCTCCGTC CTGCCCCAGC AAGACAACCT AGATCTCCAG  
GAGAACTGCC ATCCAGCTTT GTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTAGCT  
AGAACTTTGA AGGACAATTT CTGCAATTAA TAAAGTTAA GCCCTGAGG GTCCCTGATA ACAACCTGGA GACCAGGATT  
TTATGGCTCC CTTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTGTCTGTAT  
ATGCAGTATT GAGCACTGTA GGCAAGAGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAA AGACTCAAGT  
GGGAACGACT GGGCACTGCC ACCACAGAA AGCTTTCGA TGAGACGGTG GAGCAGGGTG CTGTGGGTGA TATGGACAGC  
AGAAGGGGGA GCCAGGTTCC AGCTACCAA TACTATTGCA CACCACCTGT CCGCTCCT CTGCAGAAAA CAGCCTGAGC  
TCCACCTCGG CTTCTCCTTG CCCTGGCTGG TTGCTCTTA CCCCTGTCTC CTTCTGGACC AGTTTTTGT CTTCCCTTGT  
GACCCTGAGG GGTAACAGCC TCTTTTCCAC TTTCTTTCAG CGCCGACATG CTCAATGTCA CTTGCAAGG GCCCACTCTT  
AACGGGACCT TTGCCAGAG CAAATGCCCC CAAGTGAGT GGTGGGGCTG GCTCAACACC ATCCAGCCCC CTTCTCTCTG  
GGTGTGTTG GTGCTGGCCA CCTAGAGAA CATCTTGTCT CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTG  
CAGAGACTCA CTTGGGGAAC GTGGCCGAC CAGACTGTAT CTGGCTGCG GGGCTGCCCT TTGGGCCAT CACCATCTCC  
AACAACTTCG ACTGGCTCTT TGGGGAGACG CTGCGCGG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT  
CTGTTTCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC  
GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGGTGAC GCTGCTCTG AGCTACCCA TGCTGGTGT CCGGACCATG  
AAGGAGTACA GCGATGAGG CCACAACGTC ACCGCTGTG TCATCAGCTA CCATCCCTC ATCTGGGAAG TGTTCACCA  
CATGCTCTG AATGTCGTGG GCTTCTGCT GCCCTGAGT GTCATCACT TCTGCACGAT GCAGATCATG CAGGTGCTGC  
GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCTGGTTGT GCTGCTGCTA  
TTCATCACT GCTGGCTGCC CTTCCAGATC AGCACTTCC TGGATACGCT GCATCGCTC GGCATCTCT CCAGCTGCTCA  
GGACGAGCGC ATCATCGATG TAATCACACA GACGCTCTC TTATGGGCT ACAGCAACAG CTGCCCTAAC CCACTGGTGT  
ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTGGGA GGTGTACCAG GGAGTGTGCC AGAAGGGGG CTGCAGGTCA  
GAACCATTC AGATGGAGAA CTCCATGGG CACTGCGGA CCTCCATCTC CGTGAACGC CAGATTACA AACTGCAGGA  
CTGGGCAGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGAAGGA TTGAGGGACA GTTGCTTTTC  
AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CTTGGGAAA TGAGTTGATG TCTCCGGTAA AACACCGGAG



ACTAATTCCT GNCCTGCCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG GGTGAACTCA CGCACAGCCA AGGACTCCAA  
AATCACAACA GCATTACTGT TCTTATTGCG TGCCACACCT GAGCCAGCCT GCTCCTTCCC AGGAGTGGAG GAGGCCTGGG  
GGCAGGGAGA GGAGTGAATG AGCTTCCCTC CCGTGTGTTT TCCGTCCTCG CCCAGCAAG ACAACTTAGA TCTCCAGGAG  
AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGACACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA  
ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTAAAGCC CTGAGGGGTC CCTGATAACA ACCTGGAGAC CAGGATTTTA  
TGGTCCCTC CACTGATGGA CAAGGGAGGT CTGTGCCAAA GAAGAAATCCA ATAAGCACAT ATTGAGCACT TGCTGTATAT  
GCAGTATTGA GCACTGTAGG CAAGAGGGAA GAAAGAGAAG GAGCCATCTC CATCTTGAAG GAACTCAAAG ACTCAAGTGG  
GAACGACTGG CACTGCCACC ACCAGAAAGC TGTTGACGA GACGGTGGAG CAGGGTGGTG TGGGTGATAT GGACAGCAGA  
AGGGGGAGAC CAAGGTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT CAGTTCCCTC TTCTGTAACA  
TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTGAGGCA  
TCATTACGA CAGCTAACTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGA TGATCCTATC ACAACCTGAG  
AGTAGTTTTT ACTCCATTA CAGGTGAGGT CATTGTGGT CAAGGACGTT AAGTAACCTC CCCAGCTCAC ACGGCTTATA  
AGTAAGGCAG CCAGGATGTG AACCAGTAG GACTATCTGG CTGCAAAAGT CCCACCTCC CTCGCCATCT GTATCTCCA  
ATCATCTTCA GTGCTTTGCT GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG AAGACAGAAA CTAGGCAGAT  
GGGCTGGCCA TGGTCTCCAA GCCAGACTGG AATCTCCAGG TCTGGAATGA TATCATTTTT CTCTTTAAT AAATTAACCTC  
ACCCACCACA CGGCTTTGAG AGGCTCAAAG GTGACCAACT CCCTGGGAG GGCCCCGTT GATAAGGAAG GAATGTGAAT  
CTCCCATCA CGGAAGCTC AAGGAGGTCA AGGGTCCAAC ACTTGAGATT GTTAGTGCTG TTGGTGGATA CTGCAGAATA  
TCCAGTGGAG CCTCAGATGA AGAACATGAG GCCCGTTA GATCCAAGGA TCAGAGGGGG CTCTGTAAGA CCCAGGGGAG  
TCAGGTGCAC TGGAGCGCGG GCTGCAGAAA ACAGCCTGAG CTCACCTCG GCTTCTCCTT GCCCTGGCTG GTTGTCTTA  
ACCCCTGTCT CTTTCTGGAC CAGTTTTTGT CTTTCCCTTG TGACCTGAGG GGTAACAGCC TCTTTCCAC TTTCTTCAG  
CGCCGACATG CTCAATGTCA CCTTGCAAGG GCCCACTCTT AACGGGACCT TTGCCAGAG CAAATGCCCC CAAGTGGAGT  
GGCTGGGCTG GCTCAACACC ATCCAGCCCC CTTTCTCTG GGTGCTGTTT GTGCTGGCCA CCCTAGAGAA CATCTTTGTC  
CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGAG CAGACCTGAT  
CCTGGCTCG GGGCTGCCCT TCTGGGCTC CACCATCTCC AACAATCTCG ACTGGCTCTT TGGGGAGACG CTCTGCCGCG  
TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC  
CTGGTGAATA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCAA GCTCTACAGC TTGGTGTATCT GGGGGTGTAC  
GCTGCTCTG AGCTCACCA TGCTGGTGT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTGTG  
TCATCAGTA CCCATCCCTC ATCTGGGAAG TGTTACCAA CATGCTCTG AATGTCGTGG GCTTCTGCT GCCCTGAGT  
GTCATCACCT TCTGCAGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA  
GAGGAGGCC ACGGTGCTAG TCTGGTGTG CTGCTGTCTA TTCATCATCT GCTGGCTGCC CTTCAGATC AGCACCCTCC  
TGGATACGCT GCATCGCCTC GGCATCCTCT CCAGCTGCCA GGACGAGCG ATCATCGATG TAATCACACA GATCGCTCC  
TTCATGGCCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA  
GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC AACTGCGGA  
CCTCCATCTC CGTGAACGC CAGATTACA AACTGCAGGA CTGGGAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT  
GCTGTGAATT TGTTAAGGA TTGAGGGACA GTTGCTTTT AGCTAGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA  
CCTTGGGAAA GTGTCTGGT TGCTCTCGGT AAAACACCGG AGACTAATTC CTGCCCTGCC CAATTTTCA GGGAGCATGG  
CTGTGAGGAT GGGGTGAAT CACGCACAGC CAAGGACTCC AAAATCACAA CAGCATTACT GTTCTTATT GTGCCACAC  
CTGAGCCAGC CTGCTCCTC CCAGGAGTGG AGGAGGCTG GGGGAGGGAG AGGAGTGAAT GAGCTTCCCT CCCGTGTGT  
CTCCGTCCCT GCCCAGCAA GACAACCTAG ATCTCCAGGA GAACTGCCAT CCACGTTTGG TGCAATGGCT GAGTGCACAA  
GTGAGTTGTT GCCCTGGGTT TCTTTAATCT ATCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTAAAGCC  
CTGAGGGGTC CCTTGATAAC AACCTGGAGA CCAGGATTTT ATGGCTCCCC TCACTGATGG ACAAGGAGGT CTGTGCCAAA  
GAAGAATCAA TAAGCATA TGAGCACTT TGTATATCAG TATTGAGCAC TGATAGGA ATGTTCTCTC CTGGAAGAT  
ATCAATGTTT CTGTCTGTT GTGAGGACTC CGTGCCCAAC ACGGCTCTT TCAGCGCCGA CATGCTCAAT GTCACCTGC  
AAGGGCCAC TCTTAACGGG ACCTTTGCC AGAGCAAATG CCCCAGTG GAGTGGCTGG GCTGGCTCAA CACCATCCAG  
CCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGCTCTCAGC GTCTTCTGCC TGCACAAGAG  
CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC CTGCGGGCTG CCCTCTGGG  
CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGA GACGCTCTG CGCGTGGTGA ATGCCATTAT CTCCATGAAC  
CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGT AAAACCATGT CCATGGGCGC  
GATGCGCGG GTGCGTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGT GTACGCTGCT CTGAGCTCA CCATGCTGG  
TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTATCA GCTACCCATC CCTCATCTGG  
GAAGTGTTC CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCT GAGTGTATC ACCTTCTGCA CGATGCAGAT  
CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCTGG  
TTGTGCTGCT GCTATTATC ATCTGTGGC TGCCCTTCCA GATCAGCAC TTCTGGATA CGCTGCATCG CCTCGGCATC  
CTCTCCAGT GCCAGGACA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTATG GCCTACAGCA ACAGCTGCCT  
CAACCCACTG GTGACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGA CCAGGGAGTG TGCCAGAAAG  
GGGCTGCGG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT  
CACAACTGC AGGACTGGG AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG  
GACAGTTGCT T ATGTTCTCTC CTGGAAGAT ATCAATGTTT CTGTCTGTT GTGAGGACTC CGTGCCACC ACGGCTCTT  
TCAGCGCGGA CATGCTCAAT GTCACCTTGC AAGGGCCAC TCTTAACGGG ACCTTTGCC AGAGCAAATG CCCCAGTG  
GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT  
TGCTCTCAGC GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGAC  
TGATCCTGGC CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TCTTGGGGA TCTTGGGGA GACGCTCTG  
CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CTGATGCTG GTGAGCATCG ACCGCTACCT  
GGCCTGGTG AAAACCATGT CCATGGGCGG GATGCGCGG GTGCGTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGT  
GTACGCTGCT CTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT  
TGTGTATCA GCTACCCATC CCTCATCTGG GAAGTGTTC CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCT  
GAGTGTATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG  
GGCCACGGTG CTAGTCTGG TTGTGCTGCT GCTATTATC ATCTGTGGC TGCCCTTCCA GATCAGCAC TTCTGGATA CGCTGCATCG  
CCTCGGCATC CTCTCCAGT GCCAGGACA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTATG GCCTACAGCA ACAGCTGCCT  
CAACCCACTG GTGACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGA CCAGGGAGTG TGCCAGAAAG  
GGGCTGCGG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT  
CACAACTGC AGGACTGGG AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA AGGATTGAGG  
GACAGTTGCT T ATGTTCTCTC CTGGAAGAT ATCAATGTTT CTGTCTGTT GTGAGGACTC CGTGCCACC ACGGCTCTT  
TCAGCGCGGA CATGCTCAAT GTCACCTTGC AAGGGCCAC TCTTAACGGG ACCTTTGCC AGAGCAAATG CCCCAGTG  
GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT  
TGCTCTCAGC GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGAC  
TGATCCTGGC CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TCTTGGGGA TCTTGGGGA GACGCTCTG  
CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CTGATGCTG GTGAGCATCG ACCGCTACCT  
GGCCTGGTG AAAACCATGT CCATGGGCGG GATGCGCGG GTGCGTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGT  
GTACGCTGCT CTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT  
TGTGTATCA GCTACCCATC CCTCATCTGG GAAGTGTTC CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCT  
GAGTGTATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA  
CGGAGAGGAG GGCCACGGTG CTAGTCTGG TGTTGCTGCT GCTATTATC ATCTGTGGC TGCCCTTCCA GATCAGCAC  
TTCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGT GCCAGGACA GCGCATCATC GATGTAATCA CACAGATCGC

CTCCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT  
GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG  
CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAACTGC AGGACTGGG AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG  
GGCTGCTGTG AATTGTGTGA AGGATTGAGG GACAGTTGCT T GCCCTTCAAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC  
TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGGGAC ATCAGGCTGC CCCGAGTAC CAGGGAGCGA CTGAAGTGCC  
CATGCCGCTT GCTCCGAGA AGGTGGGTGC CGGGCAGGGG CTGCTCCAGC CGCTCACCT CTGCTGGGAG GACAACTGT  
CCCAGCACAG AGGGAGGGAG GGAGGGCAGG CAGCGGGGAG AAGTTCCCT GTGTCGTGG GGAGTT GCCCTTCAAA  
GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC GGTGGGGACA  
TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCC ATGCCGCTT CTCCGAGAA GGTGGGTGCC GGGCAGGGGC  
TGCTCCAGCC GCCTCACCTC TGCTGGGAGG ACAAAGTGT CCAGCACAGA GGGAGGGAGG GAGGGCAGGC AGCGGGGAGA  
AGTTCCCTG TGGTCGTGGG GAGTT GAGCTCTTCA ATATTTTATG GAAAGCTATA GATGAGGCTC CATAGGGGAT  
AAGCACAGA CACACTTTT CAGAGGGCTT GTGACTCTG GGCAGCTGT CCATAGACCT CTGTCCCCA CTGGCAAGTC  
AGGAACTCC AGATTAAGGA GCCCAATGT GTTGAACAG CCAGGTGCAC AGATGAGTCA ACCCAGCAG CAGGCCAGGG  
AGGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA  
CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA  
AGAGGAGCTG ATGGGCTGGG GGGACGTCT CTGGCCCTCC TGTCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT  
CTCTTCTGAA GGAAGGGTTT TAAGGCTTCA AAAAAAATG TTTTGAAAGT CCCTGCCCTT TCCAGCTCCT ACCGTCTCAG  
CCCTGGGAGT GTAAAGTGCT GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG  
AGAAACCTCC GCCATACATC TCCGAAGAAA CGGCCGCTG TCTCAGGGGA GCGCAAAAC CCGTACCAAG GAAACAGGAC  
AGCTTCTGCC ACTGTGCGCC TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCAGGACT CCGCTGCC CACTGGCCAC  
CCTCTGTTTA CACCTTCCGC GTAAACGCC ACTGTTTACA TCCAAACTC AGACACAAA TAACCACCTC AAGAAGATAA  
ATAATGATAA GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGGC TTCCAGGCC ACTTTGTGGT CAGCGGGAG  
GGACGTTTTT GCGTCCAC GACTCCAACG GGCAGCGGG CCTACGCAA CATGGAAATC TTCAAAGAGC CTCCTGGCC  
CCCAGGGCTC AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGCCCA CAGCCAGCCT GGTCCAGCT  
GGCAGGAGT GCAGAGCTCA GCTGGAGGCG AGGGGAAGT GCCCAGGAG CTGATGACAT CACTACCCAG CTTTCAAAG  
ATGAGCTGTT CCGCGCGCCA CTCCAGCTCT GCTTCTGGG TCCGAGGAG GGTGGGGAC GGTGGTACG GTGGGACAT  
CAGGCTGCCC CGCAGTACCA GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGAGAAG GTGGGTGCCG GGCAGGGCT  
GCTCCAGCCG CTCACCTCT GCTGGGAGGA CAACTGTCC CAGCACAGAG GGAGGGAGG AGGGCAGGCA GCGGGAGAA  
GTTTCCCTGT GTTCGTGGG AGTTGGGAAA AGTTCCCTT CTTCGGAGG GAGG CAGATTACA AACTGCAGGA  
CTGGGCAGGG AGCAGACAGT GAGCAAAACG CAGCAGGGCT GCTGTGAATT TGTGAAGGA TTGAGGGACA GTTGCTTTT  
AGCATGGGCC CAGGAATGCC AAGGAGACAT ATGACAGCA CCTTGGGAAA TGAGTTGATG TCTCCGTAA AACACGGAG  
ACTAATCTCT GCCTGCCCA ATTTTGCAGG GAGCATGGT GTGAGGATGG GGTGAATCA CCGACAGCA AACTGATCCAA  
AATCACAACA GCATTACTGT TCTTATTGTC TGCCACACCT GAGCCAGCCT GCTCCTCCC AGGAGTGGAG GAGGCTGGG  
GGGAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTT TCCGTCCTG CCCCAGCAAG ACAACTTAGA TCTCCAGGAG  
AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGACAAG TGAGTTGTTG CCCTGGGTTT CTTTAATCTA TTCAGCTAGA  
ACTTTGAAGG ACAATTTCTT GCATTAAATA AGGTAAAGCC CTGAGGGGTC CTGATAACA ACCTGGAGAC CAGGATTTTA  
TGGCTCCCTC CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAAATCAA TAAGCACATA TGAGCAGCTT GTGTATATG  
CAGTATTGAG CACTGTAGGC AAGACCCAAG AAGAGGAAGG AGGCATCTCC ATCTTGAAGG AACTCAAGCA CTCAAGTGGG  
AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTGCAG CAGGGTGTG TGGGTGATAT GGACAGCAGA  
AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCCT GTCCCTGCCT CAGTTCCCTT TTATGTAACA  
TGAAGTCGTT GTAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG TGCTACGTAC ATGTAGGGCA  
TCATTACGCA GACGTAACCTG GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGAA ATAGTCCGT GGAGCAGAA  
CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGCTT GGCACACAGT AGGTGCTCAT TGGCTCCCT CCACCTGTCA  
TTCCACCAC CTTAGGGCC CAACCGCCAC ACACACAGGA GCATTTGGAG AGAAGGCCAT GTCTTCAAAG TCTGATTGT  
GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCAG AGGATCAGAG TGCTGAGACC CCCCACCACC AGCCGGTACC  
TGGGAAGGGG GAGAGTGAGC GCCTGCTCAG GGAAGTGTCC TGTCTCAGCA ACCAAGGGAT TGTTCCTGTC AATCAATGGT  
TTATTGGAAG GTGGCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG GCAATGGTGT TCACCATCGG CAGTGCCAGG  
GCAGCACTCA TTCACTTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC TAGAACCTGG AGAGCTAGAA CCTGGAGAAC  
TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG AACCTGGAGG GGCTAGAACCT TAGAAGCT  
AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG AAGGGCTAGA ACCTGGAGGG CTGGAATCTG  
GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG GCTAGAACCT GGAGGGCTGG AATCTGGAGA  
GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA GAACCTGGAG GGCTAGAACC TGGCAGTTA  
GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC CTGGAAGGGC TAGAACCTGT AGAGCTAGAA  
CATGGAGAGC TAGAACCCCG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG AGGGAATGAA CCTGGAGGGC TAGAACCTGG  
AGAATGAGAA AAATTTACAT GGCAAAGAGC CCATAAATCC TGACCAATCC AACTCTGAAT TTTAAAGCAA AAGCGTGA  
AAAAAGATT CCTCCTTACC CCAAACCCAC TCTTTTTC CACCACCCAC TCTCTCTGC CTCAGTAAGT ATCTGGAGGA  
AGAAACAGG TGAAAGAAAG AGTAAAAAAC ATTTAGTATT AGTATTAGAA TGAAGTCAAA CTGTGCCACA CATGGTGAAT  
GAAAAAAGG TGTGTTTTGT CACACAGGGC AGTCATTAG CACCAGAGCA CGTGATGGTC TGAGACTCTC  
TTAGGAGCAG AGCTCTGCC CAATGGCCAT GTGGGATCC ACACCTGCTC TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG  
CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC TGTCTGTGA AAGACTCAAT GAGCTGTTAT GTGTAAACA  
GGAAGCATT CACATCCAAA CGAGAAAATC ATGTAAACAT GTGCTTTT TGTAGAGCAT AATAAATGGA TGAGGTTTT  
GCAAAAAA AAAAAA AAATGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTAA ATGAATGCTT TAAGCCGGGT  
GCAGTGCCTC ACATCTGTAA TCCCACTACT TTGGAGCGA CGGGGTGGAT TGTGTGAGT CAGGAGTTCG AGACCACT  
GGCCAACCT ACTCTTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCCAGC  
TACTCAGGAG GCTGAGACAG GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTA  
CAGCTGGGT GACAGAGAGA GACTCCGTCT CAAAAA AAAAAA AAAAAATTAC GCTTCAACA CATGATCTCT  
CACCCTGTT GAATTTTCT TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCT TCCCTCTGC  
AACTCCCTG CTTGAAGGT TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTTGCAAGTG TCCAAACCT GATCCAGCT  
GTGCTTAGG GTTCTGCAA ACCTTTTCCA GGTGTTAATT ACCTCCACT TCATTCTCTG TTTACCACT CAGCTTTTG

TTTGTAGTGT TTTGAATTCC CTGAACTGAC CGTTGTCTGA TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG  
AAACCCAGGT GCCGGGTGTT GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACAC  
ACCCACATAC CCACACATGC ACACACACAC ACACACCCGC ACTCACACAC TTGGACATGC ATAGACCACA GCTTTCACAC  
CCCTTCTAG ACAGGGGTCA CTGGGTATCC TGGAGAGAGT GTGAAGTCTT GGAATGGAAA GAGGGGGGAT TAAGCCCCAC  
CTCTAGCCAT GGGACTGAGA CAAGTCACCA CCAACCCATC TGCCTTGT TTACCTCTC TGTGAGGCAA GCACAGAGCC  
CATGCTGCC CCCCTGGATG GGAGTGATGT GAAACTTGAA GGGCGGTGAG AGCAAGGGTC GGGAAATGGAA GGGCTTGGG  
AAAAAAGGCC CTTTCACTA GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTGTGAATTG GTAAGCCAAG  
CCCGAAGGGA CTGGAAATAC TCAGATGTGT CTGTCTCCCT TATTAGGTTT AAAGTCCCTC AAGACCCTGT CTCCATCACA  
GTGCTCCAGT CCAGACCCCT CCTCTGAGCT CCAGACCCCTG CTGGACCCAA CCAGCCCTAT GGGGTGCGAT CCCCACCTGC  
CTGGAATTCT CCAAAGAACC TCCCCTTAA CAGTTCAGC CTTAAACAGT TCCAGTCTAA ACACATGACC TTTCTCTCT  
AAATCAGCCC CCCATCTCTG CCTTTCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGTCTCACC CCATCCATGT  
CCAATCAAGC ACTAGGCATG TCAGGTATAC CCTCTAAACT CCTCTGGAAT CCAGTCTCT AGTCTCCATC ATCCAGGTC  
GAAGCTAATG GGCTAACTGG TCCTTGCTTC CACTCTACCC CCACTGCACT CCTGACTTCC TGAGCAGCAG CACAGGCCA  
ATCGATATTC ACACCAAGCG CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC ACCCTGTTA GTTCTGCTCA  
CCCTCAGTGT TCTCATCAAT AATCCACTCC CCTCACAGGC GCGTTTGGGA CCCCATGTTT TATGCTCTCA CAGGACCTTT  
TGCTTGATTT TTCACTGTAC TTAGGTCACT TTGCAGTTAT TAAGTGACTG AGCAATGTCT GGCTTCTCCA GTAGACTGTC  
AGCTCCTAGC CATTGTATAC CTAGCACCGC TGTGTGGGAG CAGCTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGTCT  
CCATTTCTCC GCCCTGCTGG AGAATGCGTG TATTTGCAA TCCCCAGCCC CTGTGCCATC TAACCATCTT TTCTCTCTG  
TTCAGCCAG GTGTGGCTC ACTCACATCC CACTCTGAGT CCAAATGTTT TCTCCTGGA AGATATCAAT GTTCTGTCT  
GTTCTGTAGG ACTCCGTGCC CACCACGGCC TCTTTCAGT GAGTCAAAGG GATTCCTCAG TTCACTAGT AGGGGAGGTG  
GGCAGACACC CTGGAGAACT CCCTGGAAAG CTCAACTCTC ATGCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA  
GCCCAAAGAC AAAACCTCTC AGGTGTCCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA  
AGAGGGGCTC AGGGAGGAGA AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACCTG GAAGTGAAGG  
GAAGAGAGT GTAAATACCA GTAAATACCC AGTGGATCAG ACAGCAATGT GCCAGATTGC CTGGGAACA AATATCTCC  
AACACATGGC TGACATTGTT TGGGAGATCA GAAACCCCTA AAGAGGAGAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA  
GAGTAGAAGC AGAGGATAGG GAGATCTGTT CTGGGGACA GCATTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT  
CTCCACCCTG CTGCAGGTGC TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA  
TAGTTTCCAA TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGGC CAGGATCCAT  
CCCCTGGCT ACTGTCTGCT TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA  
AAGATGATAG ACTCTCCAAG CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTGGACCA  
AAGGGACTAC CCAGGGGAGG TCTTACCTTC AGAGGACTCT GGAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA  
GCCCAGTAGA GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC  
CACCAAAAGC GTAACCTGGG CCAGAGGATC CACTTTCAGG GTGGCAAGTT GGTTCCTCCC ATGTGGCTGC TTGAGTATCC  
TCACATGGCG GCTCACATCC TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT  
CAGAAATCAC ACACCATCCC TGCCACCATT AGTAAGAAGT CCAGCCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT  
TTGAAATGAA GAATATCAAG TAATTCGGGG GGCATATGAA AGCCACCACA CACCACAGGG ATCTTTTAT AGCATATCTC  
TTATACCATC ACTGTAGTTT CTTAAGACTC AGGGGCAAGG CTCACCTTCC TTAGCACCCA GTGAAGACCA CGCTTACTCC  
CTCACTCAAC CTCTTGCTAC TTCCACCTC TCCTGTCCA CATCTAGTGT CACTTTCAG AACATACCAA CAGCTTCCCC  
AGTCTGTGCT CTCTGCTCAG GCTGTTCCTC CTGCTGTGTC CACTTGTCTT CCTTCTGTG CGGTCAAAT GCTTCTTATC  
CTCAAGACC CAGCTCTAGA GTCACTCCA ACCCTTACC CACCAGCCCC CTCTCCAAGT CTGTGTCCA CAACCCCCCT  
GCTCCCTCA GGGCACCTC CACCCTCTGG GCCACAGTTG TCAGGAGTCA GGCAGGGCAG GGGCCGGGTG GTGTCTTCTT  
TGTGTTCTTG CACTCAGGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG  
GGTCCCCCAG TCTGGCTCCA GGATGCCAGC CAGCTGCTCC TAGAAGCAAA CGGACTTTTC TTGGGAATC CCAGAGGTGA  
TGATCAGTAA TCTCTCCCGT GACTCGTAGT TCAGCTCTTC CTCCATGAGC CTGACTATCA GTGGACCTTC CAGAAAGAGC  
CCCTTTCTCT TCTCTACCC ACAGCACAGG GCACTGGGAA AATGCCAAT GAGTCTGCTC TCTGGGTGTG GCTTTGGACT  
TTTCAGTGTG TCTCGCATCC ACTCTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAAGAA ATGCAAGCG ATTCAGGATG  
AGAGCAATAC CTAATCCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGTAGGA  
GTGGAATCA TGGCTGTCCA AGCCCCATGC CTCTGTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT  
GCCCTATGCT CTGTGAGTCT TGCCTAAGAA TGAAGAGGGA GCCAGTGGGT TAAAGATGAG GTCAACCAAA ACGGTGGTGT  
TGGAGTTTAC CACTGATAAT AAGGGTGCAA AATGTAAAT ACTAATGTTT ATTGAGCTA GTGAGTGGC TGGGGCATTT  
TGCACATTGT CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT  
TCAAGGACGT TAAGTAACTT CCCCAGCGTG ACACGGCTTA TAAGTAAAGC AGCCAGGATG TGAACCCAGT AGGACTATCT  
GGCTGCAAAG TCCCCACCCC CCTCGCCATC TGTATCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT  
CAGGATGCCA CAGACTGTCC AGGAAGACAG AAATAAGGCA TAGGGCTGG CCATGGTCTC CAAGCCAGAC TGAATCTCC  
AGGTCTGGAA TGATATCATT TTTCTCTTT AATAAATTAA CTCACCCACC ACACGGCTTT GAGAGGCTCA AAGTTGACCA  
ACTCCCTTGG GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCCTCCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC  
AACACTTGAG ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAATGAG  
GCCCCCGTTT AGAACCAAGG ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA  
AAACAGCCTG AGCTCCACCT CGGCTTCTCC TTGTCTGGC TGTTTGTCTT TAACCCCTGT CTCCTCTGG ACCAGTTTTT  
GTCTTCTCTT TGTGACCGCT GAGGGGTAAAC AGCTCTTTC CACTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA  
AGGGCCCACT CTTAAGGGGA CTTTGGCCA GACCAATGC CCCCAGTGG AGTGGCTGGG CTGGCTCAAC ACCATCCAGC  
CCCCCTTCT CTGGGTGCTG TTCGTGCTGG CCACCTAGA GAACATCTTT GTCCTCAGCG TCTCTGCTC GCACAAGAGC  
AGCTGCACGG TGGCAGAGAT CTACCTGGGG AACCTGGCCG CAGCAGACCT GATCCTGGCC TGCGGGCTGC CCTTCTGGGC  
CATCACCATC TCCAACAAT TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC  
TGACAGCAG CATCTGTTT CTGATGCTGG TGAGCATCGA CCGTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG  
ATGCGCGGCG TGCGCTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT  
GTTCCGGACC ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTACCCGCTT GTGTCATCAG CTACCATCC CTCATCTGGG  
AAGTGTTCAC CAACATGCTC CTGAATGCTG TGGGCTCTCT GCTGCCCTG AGTGCTATC CTTCTGCAC GATGCAGATC  
ATGCAGGTGC TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCTGGT

TGTGCTGCTG CTATTCATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC  
TCTCCAGCTG CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC  
AACCCACTGG TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG  
GGGCTGCAGG TCAGAACCCA TTCAGATGGA GAACCTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTC  
ACAACTGCA GGACTGGGCA GGGAGCAGAC AGTAGAGCAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGGG  
ACAGTTGCTT TTCAGCATGG GCCCAGGAAT GCCAAGAGGA CATCTATGCA CGACCTTGGG AAATGATGTTG ATGTCTCCGG  
TAAAACACCG GAGACTAATT CCTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGTGAAAC TCACGCACAG  
CCAAGGACTC CAAAATCACA ACAGCATTAC TGTTCTTATT TGCTGCCACA CCTGAGCCAG CTGCTCCTT CCCAGGAGTG  
GAGGAGGCTT GGGGCGAGG AGAGGAGTGA CTGAGCTTCC CTCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACCT  
AGATCTCCAG GAGAACTGCC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTCTTTAAT  
CTATTCAGCT AGAATTTGA AGGACAATTT CTGCAATTA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA  
GACCAAGGAT TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCA AAGAAGAATC CAATAAGCAC ATATTGAGCA  
CTTGCTGAT ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACCTCA  
AGACTCAAGT GGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTTGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA  
TATGGACAGC AGAAGGGGGA GCCAGGTTCC AGCTACCAA TACTATTGCA CACCACCTGT CTGCCTC TGATCCTATC  
ACAACCTGAG AGTAGTTTTT ACTCCATTTA CAGGTGAGGT CATTGTGGTT CAAGGACGTT AAGTAACTTC CCCAGCTCAC  
ACGGCTTATA AGTAAGGCAG CCAGGATGTG AACCCAGTAG GACTATCTGG CTGCAAAGTC CCCACCTCC CTCGCCATCT  
GTATCCTCCA ATCATCTTCA GTGCTTTGCT GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG AAGACAGAAA  
CTAGGCAGAT GGGCTGGCCA TGGTCTCCAA GCCAGACTGG AATCTCCAGG TCTGGAATGA TATCATTTTT CTCTTTAAT  
AAATTAATC ACCCACCACA CGGCTTTGAG AGGCTCAAAG GTGACCAACT CCCTTGGGAG GGGCCCGGTT GATAAGGAAG  
GAATGTGAAT CCTCCCATCA CGGAAGCTTC AAGGAGGTCA AGGGTCCAAC ACTTGAGATT GTTAGTGCTG TTGGTGGATA  
CTGCAAGATA TCCAGTGGAG CCTCAGATGA AGAATAGTAG GCCCGTTTA GATCCAAGGA TCAGAGGGGG CTCTGTAAGA  
CCCAGGGGAG TCAGGTGCAC TGGAGCGCGG GCTGCAGAAA ACAGCCTGAG CTCCACCTCG GCTTCTCCTT GCCCTGGCTG  
GTTGCTCTTA ACCCTGTCT CTCTCTGGAC CAGTTTTTGT CTCTCCCTTG TGACCTGAGG GGTAACAGCC TCTTTTCCAC  
TTCTTTTCAG CGCCGACATG CTCAATGTCA CTGTGCAAGT GCCCATCTT AACGGGACCT TTGCCAGAG CAAATGAGCC  
CAAGTGGAGT GGCTGGGCTG GCTCAACACC ATCCAGCCCC CTCTCTCTG GGTGCTGTTG GTGCTGGCCA CCCTAGAGAA  
CATCTTTGTC CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGACG  
CAGACCTGAT CTGGCCTGC GGGCTGCCCT TCTGGGCCAT CACCATCTCC AACAACCTCG ACTGGCTCTT TGGGGAGACG  
CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCTG ATGCTGGTGA GCATCCAGCG  
TACCTGGCC CTGGTGAAAA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGG TTGGTGTATCT  
GGGGGTGTAC GCTGCTCCTG AGCTCACCCA TGCTGGTGT CCGGACCATG AAGGAGTACA GCGATCAGGG CCACAACGTC  
ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTACCAA CATGCTCCTG AATGTCGTGG GCTTCTGCT  
GCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA  
TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCCTGTTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCAGATC  
AGCACCTTCC TGGATACGCT GCATCGCTC GGCATCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA  
GATCGCCTCC TGTATGGCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA  
AGCTTGGGA GGTGTACAG GGAGTGTGCC AGAAGGGGG GTGCAGGTCA GAACCCATT AGATGGAGAA CTCCATGGGC  
ACACTGCGGA CCTCCATCTC CGTGGAACGC CAGATTACA AACTGCAGGA CTGGGCGAGG AGCAGACAGT GAGCAACGC  
CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTT AGCATGGGCC CAGGAATGCC AAGGAGACAT  
CTATGCACGA CCTTGGGAAA TGAGTGTGA TGTCTCCGT AAAACACCGG AGACTAATC CTGCCCTGCC CAATTTTCTG  
GGGAGCATGG CTGTGAGGAT GGGGTGAACT CACGCACAGC CAAGGACTCC AAAATCACAA CAGCATTACT GTTCTTATT  
GCTGCCACAC CTGAGCCAGC CTGCTCCTC CCAGGAGTGG AGGAGGCCTG GGGGAGGGAG AGGAGTGACT GAGCTTCCCT  
CCCGTGTGT TCCGCTCCT GCCCAGCAA GACAATTAG ATCTCCAGGA GAACCTGAT CCACGTTGG TGCAATGGCT  
GAGTGACAAA GTGAGTTGTT GCCCTGGGT TCTTTAATCT ATCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA  
AGGTTAAGCC CTGAGGGGTC CCTTGATAAC AACCTGGAGA CCAGGATTTT ATGGCTCCCC TCACTGATGG ACAAGGAGGT  
CTGTGCCAAA GAAGAATCAA TAAGCACATA TGAGCACTT TGTATATCAG TATTGAGCAC TGTAGGCA ATGTTCTCTC  
CCTGGAAGAT ATCAATGTT CTGTCTGTT GTGAGGACTC CGTGCCACC ACGGCTCTT TCAGCGCCGA CATGCTCAAT  
GTCACCTTG AAGGGCCAC TCTAACGGG ACCTTTGCC AGAGCAATG CCCCCAAGT GAGTGGCTGG GCTGGCTCAA  
CACCATCAG CCCCCCTCC TCTGGGTGCT GTTCTGCTG GCCACCTAG AGAATCATCT TGCTCTCAG GTCTTCTGCC  
TGACAAGAG CAGCTGCAG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCTGGC CTGCGGGCTG  
CCCTTCTGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA ATGCCATTAT  
CTCCATGAAC CTGTACAGCA GCATCTGTTT CTGATGCTG GTGAGCATCG ACCGCTACCT GGCCCTGGTG AAAACCATGT  
CCATGGGCGG GATGCGCGGC GTGCGCTGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT CTGAGCTCA  
CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA GCTACCCATC  
CCTCATCTGG GAAGTGTTC CCAACATGCT CTGAATGTC GTGGGCTTCC TGCTGCCCT GAGTGTATC ACCTTCTGCA  
CGATGCAGAT CATGCAAGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCGA CCGAGAGGAG GGCCACGGTG  
CTAGTCTGG TTGTGCTGCT GCTATTATC ATCTGCTGG TGGCCTTCCA GATCAGCACC TTCTGGATA CGCTGCATCG  
CCTCGGCATC CTCTCCAGT GCCAGGACA GCGCATCATC GATGTAATCA CACAGATCGC CTCTTCATG GCCTACAGCA  
ACAGCTGCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG  
TGCCAGAAAG GGGGCTGCAG GTCAGAAACC ATTCAGATGG AGAATCCAT GGGCACACTG CGACCTCCA TCTCCGTGGA  
ACGCCAGATT CACAACTGC AGGACTGGG AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG AATTTGTGTA  
AGGATTGAGG GACAGTTGCT T ATGTTCTCTC CTGGAAGAT ATCAATGTTT CTGTCTGTT GTGAGGACTC CTGCCCCACC  
ACGGCTCTT TACAGCGCGA CATGCTCAAT CTACCTTCC AAGGGCCAC TCTTAACGGG ACCTTGGCCC AGAGCAAATG  
CCCCAAGTG GAGTGGCTGG GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG  
AGAATCATCT TGCTCTCAG GTCTTCTGCC TGCACAAGAG CAGCTGCAG GTGGCAGAGA TCTACCTGGG GAACCTGGCC  
GCAGCAGACC TGATCCTGGC CTGCGGGCTG CCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA  
GACGCTCTGC CGCGTGGTGA ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CTGATGCTG GTGAGCATCG  
ACCGCTACCT GGCCCTGGTG AAAACCATGT CCATGGGCGG GATGCGCGGC GTGCGCTGG CCAAGCTCTA CAGCTTGGTG  
ATCTGGGGGT GTACGCTGCT CTGAGCTCA CCATGCTGG TGTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA

CGTCACCGCT TGTGTCATCA GCTACCCATC CCTCATCTGG GAAGTGTTC CCAACATGCT CCTGAATGTC GTGGGCTTCC  
TGCTGCCCT GAGTGTATC ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG  
GAGATCCAGA CGGAGAGGAG GGCCACGGTG CTAGTCTGG TTGTGCTGCT GCTATTATC ATCTGCTGGC TGCCCTTCCA  
GATCAGCACC TTCTGGATA CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA  
CACAGATCCG CTCTTCATG GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA  
AAGAAGTCTT GGGAGGTGTA CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTACAGATGG AGAATCCAT  
GGGCACACTG CGGACCTCCA TCTCCGTGGA ACGCCAGATT CACAACTGC AGGACTGGGC AGGGAGCAGA CAGTGAGCAA  
ACGCCAGCAG GGCTGCTGTG AATTGTGTA AGGATTGAGG GACAGTTGCT T GCCCTTCAA GATGAGCTGT TCCCGCCGCC  
ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGGGAC ATCAGGCTGC CCCGAGTAC CAGGGAGCGA  
CTGAAGTCC CATGCCGCTT GCTCCGGAGA AGGTGGGTGC CGGGCAGGGG CTGCTCCAGC CGCTCACCT CTGCTGGGAG  
GACAACTGT CCGAGCAG AGGGAGGGAG GGAGGGCAGG CAGCGGGGAG AAGTTTCTCT GTGGTCTGGT GGAGTT  
GCCCTTCAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGGA CGGTGGTGAC  
GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGGAGAA GGTGGGTGCC  
GGGCAGGGG TGCTCCAGCC GCCTACCTC TGCTGGGAGG ACAAAGTGC CCAGCACAGA GGGAGGGAGG GAGGGCAGGC  
AGCGGGGAGA AGTTTCCCTG TGTCGTGGG GAGTT GAGCTCTCA ATATTTAGT GAAAGCTATA GATGAGGCTC  
CATAGGGGAT AAAGCACAGA CACACCTTT CAGAGGGCTT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCAA  
CTGGCAAGT AGGAACTCC AGATTAAGGA GCCCAATGT GGTGAAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC  
CAGGCCAGGG AGGCCTTCA CTCAAGAGCC TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCATAAAC  
TGATCTGAGA CTCTGTTTCC CTGTCTCCAT GATGATGGGA TCAGGCTTGA TTGCTGTTT GTAGGCTTGT TATGAATCAA  
GTCACAGGA AGAGGAGCTG ATGGGCTGGG GGGACGTCT CTGGCCCTCC TGCTCTTCC CCAGATCCAC TGGGCCCACT  
CTTATCTGT CTCTCTGAA GGAAGGGTTT TAAGGCTTCA AAAAAAATG TTTTGAAGT CCCTGCCCTT TCCAGCTCT  
ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT GCAGATAGT AGTAAGTCT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC  
TTGACATGGG AGAACTCC GCCATACAT TCCGAAGAA CGGCCGCTG TCTCAGGGGA GCGCAAAAC CCGTACCCAG  
GAAACAGGAC AGCTTCTGCC ACTGTCGCC TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCCAGGACT CCGCTGCC  
ACCTGGCCAC CCTCTGTTA CACCTCCGC GTAAACGCC ACTGTTTACA TCCAAACTC AGACAAAAA TAACCACCTC  
AAGAAGATA ATAATGATA GAAATAAATG TTACGCGAGG CAAATTTATT CACATGGGGC TTCCAGGCC ACTTTGTGGT  
CAGCCGGGAG GGACGTTTT GCGTCCAC GACTCCAACG GGCAGCCGGG CCTACGCAA CATGGAAATC TTCCAAGAGC  
CTCCTGGCC CCCAGGGCTC AGAGGGTGGC AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGGCCCA CAGCCAGCT  
GGCTCCAGT GGGCAGGAGT GCAGAGCTCA GCTGGAGGCG AGGGGGAAGT GCCCAGGAG CTGATGACAT CACTACCCAG  
CCCTTCAAAG ATGAGTGTT CCCGCCCA CTCCAGCTT GGCTTCTGG CTCCGAGGAG GGGTGGGAC GGTGGTGACG  
GTGGGGACAT CAGGCTGCC CGCAGTACCA GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGAGAAAG GTGGGTGCCG  
GGCAGGGCT GCTCCAGCCG CCTACCTCT GCTGGGAGGA CAACTGTCC CAGCACAGAG GGAGGGAGG AGGGCAGGCA  
GCGGGGAGAA GTTCCCTGT GGTCTGGGG AGTTGGGAAA AGTTCCCTC CTCCGAGG GAGG -3' (FRAG. NO:2275)  
(SEQ. ID NO:2286)

5'- GAGCTCTCA ATATTTAGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTT  
CAGAGGGCT GTGGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCAA CTGGCAAGT AGGAACTCC AGATTAAGGA  
GCCCAATGT GGTGAAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGCCTTCA CTCAAGAGCC  
TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT  
GATGATGGGA TCAGGCTTGA TTGCTGTTT GTAGGCTTGT TATGAATCAA GTCACAGGA AGAGGAGCTG ATGGGCTGGG  
GGGACGTCT CTGGCCCTCC TGCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGT CTCTCTGAA GGAAGGGTTT  
TAAGGCTTCA AAAAAAATG TTTTGAAGT CCCTGCCCTT TCCAGCTCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT  
GCAGATAGT AGTAAGTCT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAACTCC GCCATACATC  
TCCGAAGAAA CGGCCGCTG TCTCAGGGGA GCGCAAAAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC ACTGTGCC  
TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCCAGGACT CCGCTGCC ACCTGGCCAC CCTCTGTTA CACCTCCGC  
GTAAACGCC ACTGTTTACA TCCAAACTC AGACAAAAA TAACCACCTC AAGAAGATA ATAATGATA GAAATAAATG  
TTACGCGAGG CAAATTTATT CACATGGGGC TTCCAGGCC ACTTTGTGGT CAGCCGGGAG GGACGTTTT GCGTCCAC  
GACTCCAACG GGCAGCCGGG CTACGCAA CATGGAAATC TTCCAAGAGC CTCCTGGCC CCCAGGGCTC AGAGGGTGGC  
AGAGCGGAGA GCGAAGGTGG CCGCAGCTT CCCGCCCA CAGCCAGCT GGCTCCAGT GGGCAGGAGT GCAGAGCTCA  
GCTGGAGGCG AGGGGAAGT GCGCAGGAG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGTGTT CCGCTGCCA  
CTCCAGCTT GGCTTCTGG CTCCGAGGAG GGTGGGGAC GGTGGTGACG GTGGGGACAT CAGGCTGCC CGCAGTACCA  
GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGAGAAAG GTGGGTGCC GGCAGGGGCT GCTCCAGCCG CCTACCTCT  
GCTGGGAGGA CAACTGTCC CAGCACAGAG GGAGGGAGG AGGGCAGGCA GCGGGGAGAA GTTCCCTGT GGTCTGGGG  
AGTTGGGAAA AGTTCCCTC CTCCGAGG GAGG -3' (FRAG. NO:2275) (SEQ. ID NO:2461)

5'- GCCCTTCAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGA  
CGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTACC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGAGAA  
GGTGGGTGCC GGCAGGGG TGCTCCAGCC GCCTACCTC TGCTGGGAGG ACAAAGTGC CCAGCACAGA GGGAGGGAGG  
GAGGGCAGGC AGCGGGGAGA AGTTTCCCTG TGTCGTGGG GAGTT -3' (FRAG. NO:2275) (SEQ. ID NO:2460)

5'- GCCCTTCAA GATGAGCTGT TCCCGCCGCC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGA  
CGGTGGGGAC ATCAGGCTGC CCCGAGTAC CAGGGAGCGA CTGAAGTGCC CATGCCGCTT GCTCCGAGA AGGTGGGTGC  
CGGGCAGGGG CTGCTCCAGC CGCTCACCT CTGCTGGGAG GACAACTGT CCCAGCACAG AGGGAGGGAG GGAGGGCAGG  
CAGCGGGAG AAGTTTCCCT GTGGTCTGG GGAGTT -3' (FRAG. NO:2275) (SEQ. ID NO:2459)

5'- ATGTTCTCTC CTGGAAGAT ATCAATGTTT TGTTCTGTTG GTGAGGACTC CGTGGCCACC ACGGCTCTT TCAGCGCCGA  
CATGCTCAAT GTCACCTTG AAGGGCCAC TCTTAACGGG ACCTTTCCCC AGAGCAATG CCCCCAAGTG GAGTGGCTGG  
GCTGGCTCAA CACCATCCAG CCCCCCTTCT TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAATCTT TGCTCTCAGC  
GTCTTCTGCC TGACAAGAG CAGCTGCAG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCTGGC  
CTGCGGGCTG CCTTCTGGG CCATCACCAT CTCAACAAC TTCGACTGCG TCTTGGGGA GACGCTCTG CCGTGGTGA  
ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CTGATGCTG GTGAGCATCG ACCGCTACCT GGCCTGGT  
AAAACCATGT CCATGGGCGG GATGCGCGG GTGCGTGGG CCAAGCTCTA CAGCTTGGT ATCTGGGGT GTACGCTGCT  
CCTGAGCTCA CCGATGCTGG TGTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTACCCTG TGTGTCATCA



GCTACCCATC CCTCATCTGG GAAGTGTTC CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCTT GAGTGTATC  
ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG  
GGCCACGGTG CTAGTCTTGG TTGTGCTGCT GCTATTATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA  
CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG  
GCCTACAGCA ACAGTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA  
CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAATCCAT GGGCACACTG CGGACCTCCA  
TCTCCGTGGA ACGCCAGATT CACAACTGC AGGACTGGG AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG  
AATTGTGTA AGGATTGAGG GACAGTTGCT T -3' (FRAG. NO:2275) (SEQ. ID NO:2458)

5'- ATGTTCTCTC CTGGAAGAT ATCAATGTTT CTGTCTGTT GTGAGGACTC CGTGCCACC ACGGCTCTT TCAGCGCCGA  
CATGCTCAAT GTCACCTTGC AAGGGCCAC TCTAACGGG ACCTTGGCC AGAGCAAATG CCCCAGATG GAGTGGCTGG  
GCTGGTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC  
GTCTTCTGCC TGCACAAGAG CAGCTGCACG GTGCGAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC  
CTGCGGGCTG CCTTCTGGG CCATCACCAT TCCACATGCT TCGCATGGC TCTTTGGGA GACGCTGTG CCGGTGGTGA  
ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CTTGATGCTG GTGAGCATCG ACCGCTACCT GGCCTGGTG  
AAAACCATGT CCATGGGCGG GATGCGCGGC GTGCGCTGG CCAAGCTCTA CAGCTTGGT ATCTGGGGGT GTACGCTGCT  
CCTGAGCTCA CCCATGCTGG TGTTCCGAC CATGAAGGAG TACAGCGATG AGGGCCACA CGTCACCGCT TGTGTCATCA  
GCTACCCATC CCTCATCTGG GAAGTGTTC CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCTT GAGTGTATC  
ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG  
GGCCACGGTG CTAGTCTTGG TTGTGCTGCT GCTATTATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCCTGGATA  
CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG  
GCCTACAGCA ACAGTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA  
CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAATCCAT GGGCACACTG CGGACCTCCA  
TCTCCGTGGA ACGCCAGATT CACAACTGC AGGACTGGG AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG  
AATTGTGTA AGGATTGAGG GACAGTTGCT T -3' (FRAG. NO:2275) (SEQ. ID NO:2457)

5'- TGATCTATC ACAACCTGAG AGTAGTTTTT ACTCCATTTA CAGGTGAGGT CATTGTGGT CAAGGACGTT AAGTAACCTC  
CCCAGCTCAC ACGGCTTATA AGTAAGGCAG CCAGAGATGT AACCCAGTAG GACTATCTGG CTGCAAAGTC CCCACCTCC  
CTCGCCATCT GTATCTTCCA ATCATCTTCA GTGCTTTGCT GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG  
AAGACAGAAA CTAGGCAGAT GGGCTGGCCA TGGTCTCAA GCCAGACTGG AATCTCCAGG TCTGGAATGA TATCATTTTT  
CTCTTTAAT AAATTAATC ACCCACCACA CGGCTTTGAG AGGCTCAAAG GTGACCAACT CCCTGGGAG GGGCCCGGT  
GATAAGGAAG GAATGTGAAT CCTCCATCA CGGAAGCTT AAGGAGGTCA AGGGTCCAAC ACTTGAGATT GTTAGTGCTG  
TTGGTGGATA CTGAGAATA TCCAGTGGAG CCTCAGATGA AGAATCATG GCGGCTTTA GATCCAAAGG TCAGAGGGGG  
CTCTGTAAAG CCCAGGGGAG TCAGGTGCAC TGGAGCGCG CTGCAGAAA ACAGCTGTAG TCCACCTCG GCTTCTCTT  
GCCCTGGCTG GTTGTCTTA ACCCTGTCT CTTCTGGAC CAGTTTTGT CTTCCCTTG TGACCTGAGG GGTAACAGCC  
TCTTTTCCAC TTTCTTTCAG CGCCGACATG CTCAATGTCA CTTTGAAGG GCGCACTCT AACGGGACCT TTGCCAGAG  
CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GCTCAACACC ATCCAGCCCC CTTCTCTG GGTGCTGTT GTGCTGGCCA  
CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CTGGGGAAAC  
CTGGCCGAC CAGACCTGAT CCTGGCCTGC GGGGTGCCCT TGTGGCCAT CACCATCTCC ACAAATCTG ACTGGCTCTT  
TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTCTCG ATGCTGTGA  
GCATCGACCG CTACCTGGCC CTGGTGA AAAA CCATGTCCAT GGGCCGATG CGCGGCTGC GCTGGGCCAA GCTCTACAGC  
TTGGTGTATC GGGGGTGTAC GCTGCTCTG AGCTACCCA TGCTGGTGT CCGGACCATG AAGGAGTACA GCGATGAGGG  
CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTACCAA CATGCTCTG AATGCTGTG  
GCTTCTGCT GCGCTGAGT GTCATCACCT TCTGCAGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAA  
TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCTGGTTGT GCTGCTGCTA TCTATCATCT GCTGGCTGCC  
CTTCCAGATC AGCACTTCC TGGATACGT GCATCGCTC GGCATCTCT CCAGCTGCA GGACGAGCG ATCATCGATG  
TAATCACACA GATCGCTCC TTCATGGCCT ACAGCAACAG CTGCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC  
TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA  
CTCCATGGG ACATGCGGA CCTCATCTC CGTGAACGC CAGATTACA AACTGCAGGA CTGGGAGGG AGCAGACAGT  
GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGAAGGA TTGAGGGACA GTTGCTTTT AGCATGGGCC CAGGAATGCC  
AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTGTGA TGTCTCCGT AAAACACCGG AGACTAATTC CTGCCCTGCC  
CAATTTTCGA GGGAGCATG CTGTGAGAT GGGGTAACT CAGCAGACG CAAGGACTCC AAAATCAGGA CAGCATTA  
GTTCTTATT GCTGCCACG CTGAGGAGC GTGCTCTT CCAGGCTGG AGGAGGCTG GGGGAGGAG AGGAGTACT  
GAGCTTCCCT CCGTGTGTT CTCCGTCCCT GCGCCAGCAA GACAACCTAG ATCTCCAGGA GAACTGCCAT CCAGTTTGG  
TGCAATGGCT GAGTGACAA GTGAGTTGTT GCCCTGGGT TCTTAATCT ATCAGCTAGA ACTTTGAAGG ACAATTTCTT  
GCATTAATAA AGGTAAAGCC CTGAGGGGTC CTTGATAAC AACCTGGAGA CCAGGATTTT ATGGCTCCCC TCACTGATGG  
ACAAGGAGGT CTGTGCCAAA GAAGAATCAA TAAGCACATA TGAGCACTTC TGTATATCAG TATTGAGCAC TGTAGGCA -3'  
(FRAG. NO:2275) (SEQ. ID NO:2456)

5'- CTGCAGAAAA CAGCTGAGC TCCACCTCGG CTCTCCTTG CCCTGGCTGG TTGTCCTTAA CCCCTGTCTC CTCTGGACC  
AGTTTTTGT CTCTCCTTGT GACCCTGAGG GGTAACAGCC TCTTTTCCAC TTTCTTTCAG CGCCGACATG CTCAATGTCA  
CCTTGAAGG GCGCACTCT AACGGGACCT TTGCCAGAG CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GCTCAACACC  
ATCCAGCCCC CTTCTCTG GGTGCTGTT GTGCTGGCCA CCCTAGAGAA CATCTTGTG CTCAGCGTCT TCTGCCTGCA  
CAAGAGCAGC TGCACGGTGG CAGAGATCTA CTGGGGAAAC CTGGCCGAC CAGACCTGAT CTGGCCTGC GGGCTGCCCT  
TCTGGGCCAT CACCATCTCC ACAAATCTG ACTGGCTCTT TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTC  
ATGAACCTGT ACAGCAGCAT CTGTTCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGA AAA CCATGTCCAT  
GGGCCGATG CGCGGCTGC GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGGTGAC GCTGCTCTG AGCTACCCA  
TGCTGGTGT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC  
ATCTGGGAAG TGTTACCAA CATGCTCTG AATGCTGTG GCTTCTGCT GCGCTGAGT GTCATCACCT TCTGCACGAT  
GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAA TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG  
TCTGGTGT GCTGCTGCTA TTCATCATCT GCTGGCTGCC CTTCCAGATC AGCACCTTC TGGATACGCT GCATCGCTC  
GGCATCTCT CCAGCTGCCA GGACGAGCGC ATCATCGATG TAATCACACA GATCGCTCC TTCATGGCCT ACAGCAACAG



CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC  
AGAAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC AACTGCGGA CCTCCATCTC CGTGGAACGC  
CAGATTACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA  
TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CTTGGGAAA TGAGTTGATG  
TCTCCGGTAA AACACCGGAG ACTAATTCCT GNCCTGCCA ATTTTGACAG GAGCATGGCT GTGAGGATGG GGTGAATCA  
CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTGTC TGCCACACCT GAGCCAGCCT GCTCCTTCCC  
AGGAGTGGAG GAGGCCTGGG GGCAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTT TCCGTCCCTG CCCCAGCAAG  
ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGACACAAG TGAGTTGTGT CCTTGGGTTT  
CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAAATA AGGTTAAGCC CTGAGGGGTC CCTGATAACA  
ACCTGGAGAC CAGGATTTTA TGGCTCCCTT CACTGTAGGA CAAGGGGAGT CTGTGCCAAA GAAGAATCCA ATAAGCACAT  
ATTGAGCAT TGCTGTATAT GCAGTATTGA GCATGTAGG CAAGAGGGAA GAAAGAGAAG GAGCAATCTC CATCTTGAAG  
GAACTCAAAG ACTCAAAGTG GAACGACTGG CACTGCCACC ACCAGAAAGC TGTTCGACGA GACGGTCGAG CAGGGTGCTG  
TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT GTCCCTGCCT  
CAGTTCCTC TTCTGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG  
TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACCT GGATATGTTT ACTATAAGGA AAAGACACTG AGGTCTAGA -3'  
(FRAG. NO:2275) (SEQ. ID NO:2455)

5'- AAATGATAGA CCGTCAATAA TTTGTTAAAT GCTTTTAAAT ATGAATGCTT TAAGCCGGGT GCAGTGCTC ACATCTGTAA  
TCCAGCACT TGGAGCCGA GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAAACCTC  
ACTCTTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCAGC TACTCAGGAG GCTGAGACAG  
GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA  
GACTCCGTCT CAAAAAATAA AAAAAAATAA AAAAAATTAC GCTTCAACAA CATGATCTCT CACCACTGTT GAATTTTCTT  
TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGTCTCT AGGTCTTCTT TCCCTCTGC AAACCTCCTG CCTTGAAGGT  
TCAGAAGGAC TGTGCTGTCT CGTTGCATCC TTGTCAAGTG TCCAAACCTT GATCCAGCT GTGCTTAGGG GTTCTGCAA  
ACCTTTTCCA GGTGTTAATT ACCTCCCACT TCAATTCCTG TTTACCAACT CAGCTTTTGT TTTAGTGTG TTGAATTCC  
CTGAAGTAC CGTTGTCTGA TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT  
GCAGAGTGGC TGAAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACAC ACCACATAC CCACATGC  
ACACACACAC ACACACCCGC ACTCACACAC TTGGACATGC ATAGACCACA GCTTCCACA CCCTTCTAG ACAGGGGTCA  
CTTGGTATCC TGGAGAGAGT GTGAAGTCTT GGAATGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA  
CAAGTCACCA CCAACCCATC TGCCTTGT TTACCTCTCT TGTGAGGCAA GCACAGAGCC CATGCTGCC CCCCCTGGATG  
GGAGTGATG TAAAGTTGAA GGGCGGTGAG AGCAAGGGTC GGGAAATGAA GGCCTTGGG AAAAAAGGCC CTTTCAACTA  
GGGGCACAGA GGAGGCCCTG GGTGAGAAC TTGACAGCAC CTGTGAATTG GTAAGCCAAG CCCGAAGGGA CTGGAAATAC  
TCAGATGTGT CTGTCTCCCT TATTAGGTTT AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGCTCCAGT CCAGACCCCT  
CCTCTGAGCT CCAGACCCCTG CTGGACCCAA CCAGCCCTAT GGGGTGCGAT CCCCACCTGC CTGGAATTCT CCAAAGAACC  
TCCCTTTAA CAGTTCAGC CTTTAACAGT TCCAGTCTAA ACACATGACC TTCTCTCTT AAATCAGCCC CCCATCTCTG  
CCTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGTCTCTACC CCATCCATGT CCAATCAAGC ACTAGGCATG  
TCAGTTTAC CCTCTAAACT CCTCTGGAAT CCAATCTCTC AGTCTCCATC ATCCAGGTG GAAAGTAAAG TGACATCTGG  
TCCTTGCTTC CACTCTACCC CCACTGCAGT CCGACTTCC TGAGCAGCAG CCAGGGCCTA ATCGATATTC ACACCAAGCG  
CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC ACCCTGTTTA GTTCTGCTCA CCCTCAGTGT TCTCATCAAT  
AATCCACTCC CCTCACAGGC GCGTTTGGGA CCCCATGTTT TATGCTCTCA CAGGACCTTT TGCTTGATT TCACTGTAC  
TTAGGTCACT TTGCAGTTAT TAAGTGACTG AGCAATGTCT GCGTTTCTCA GTAGACTGTC AGCTCCTAGC CATTGTATAC  
CTAGCACCGC TGTGTGGGAG CACGTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGTCT CCATTTCTCC GCCCTGCTGG  
AGAAATGCGT TATTTGGCAA TCCCCAGCCC CTGTGCCATC TAACCATCTT TTCTTCTCTG TTCAGCCAG GTGTGGCCTC  
ACTCATATCC CACTCTGAGT CCAAATGTTT TCTCCCTGGA AGATATCAAT GTTCTGTCT GTTCTGTGAG ACTCCGTGCC  
CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCCTCAG TCACTAGTT AGGGGAGGTG GGCAGACACC CTGGAGAACT  
CCCTGGAAG CTCAACTCTC ATGCCCCGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCCCAAAGAC AAAACCTCTC  
AGGTGTCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA  
AGGGACATCT CTGTTGTTT ATATGTTTCT ATCTATCCCA GATGAACCTG GAAGTGAAGG GAAGAGAGTT AAACATTA  
GTAAATACCC AGTGGATCAG ACAGCAATGT CCGAGATTGC TTGGAAACA AAATATCTCC AACACATGTC TGACATTTGG  
TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAG ACCTGAGCCA GAGTAGAAGC  
AGAGGATAGG GAGATCTGTT CTGTTGGGACA GCATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCCACCCTG  
CTGCAGGTGC TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCCAA  
TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGG CAGGATCCAT CCCCTTGCT  
ACTGTCTTGC TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG  
ACTCTCCAAG CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGAC AAGGGACTAC  
CCAGGGGAAG TCTTACCTTC AGAGAACTCT GGAAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTACAG CCCCAGTAGA  
GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCCTTGGTT GGAAGATTCA AAGGCTAGGA AACCAGGAGC CACCAAAAGC  
GTAAGTGGG CCAGAGGATC CACTTTCAAG GTGGCAAGTT GGTTCCTCCC ATGTGGCTGC TTGAGTATCC TCATATGGG  
GCTCATATCC TTCCAAGTAA GCAATGCAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC  
ACACCATCC TGCCACCAT AGTAAGAAGT CCAGCCCACG TCCAGGAGAA GAGGAAGCAG ATTCTCTCTT TTGAATGAA  
GAATATCAAG TAATCGGGG GGCATATGAA AGCCACCACA CACCACAGG ATCTTTTGA AGCATACTT TTATACCATC  
ACTGTAGTTC CTTAAGACTC AGGGGCAAAG CTTCACTTCC TTAGCACCA GTGAAGACCA GCTTACTCC CTCACCTC  
CTCTTGCTAC TTCCACCTC TCCTGTCCA CATCTAGTGT CACTTTCCAG AACATACCAA CAGCTTCCCC AGTTCTGTGC  
CTCTGCTCAG GCTGTTCCTC CTGCTGGTC CACTGTCTCT CTTCTTGTG CGGTCAAAT GCTTCTTATC CTTCAAGACC  
CAGCTCTAGA GTCACCTCCA ACCCTTACC CACCAGCCCC CTCTCCAAGT CTGTGTCCA CAACCCCTCT GCTCCCTCCA  
GGGCACCCTC CACCCTCTGG GCCACAGTTG TCAGGAGTCA GGCAGGGCAG GGGCCGGGTG GTGTCTTCTT TGTGTTCTTG  
CACTCAGGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCCAG  
TCTGGCTCCA GGATGCCAGC CAGCTGTCTC TAGAAGCAA CGGACTTTTC CTGGGAAATC CCAGAGGTGA TGATCAGTAA  
TCTCTCCGT GACTCGTAGT TCAGTCTTTC TCCATGAGC CTGACTATCA GTGGACCTC CAGAAAGAGC CCTTTTCTCT  
TCTCTACCC ACAGCACAGG GCACTGGGAA AATGCCCAAT GAGTCTGCTC TCTGGGTTGT GCTTTGGACT TTTAGTGTG

TCTCGCATCC ACTCTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC  
CCTACTCCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAACTCA  
TGGCTGTCCA AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCCTATGGT  
CTGTGAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC  
CACTGATAAT AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCCTA GTGCAGTGCG TGGGGCATT TGCACATTGT  
CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT  
TAAGTAACTT CCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAAG  
TCCCCACCCC CCTCGCCATC TGTATCCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA  
CAGACTGTCC AGGAAGACAG AACTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGAATCTCC AGGTCTGGAA  
TGATATCATT TTTCTCTTT AATAAATTAA CTCACCCACC ACACGGCTTT GAGAGGCTCA AAGTTGACCA ACTCCCTGG  
GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCCTCCCA TCACGGAAGC TTCAAGGAGG TCAAGGGTCC AACACTTGAG  
ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATG CCAAGTGGAG CTCGAGATGA AGAATCTAG GCCCCGTTT  
AGAACCAAGG ATCAGAGGGG GCTCTGTAAG ACCAGGCTGA CTCAGGTGCA CTGGAGCGCG GGCAATGAGA AAACAGCGCTG  
AGCTCCACCT CGGCTTCTCC TTGTCTGGC TGGTTGTCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT  
TGTGACCGCT GAGGGGTAAC AGCCTCTTTC CACTTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCCACT  
CTTAACGGGA CCTTTGCCA GAGCAAATGC CCCAAGTGG AGTGCTGGG CTGGCTCAAC ACCATCCAGC CCCCCTTCT  
CTGGGTGCTG TTCGTGCTGG CCACCCTAGA GAACATCTTT GTCCTCAGCG TCTTCTGCCT GCACAAGAGC AGCTGCACGG  
TGGCAGAGAT CTACCTGGGG AACCTGGCCG CAGCAGACCT GATCCTGGCC TGCGGGCTGC CTTCTGGGC CATCACCATC  
TCCAACAAT TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC CCTATGACG TGTACACAG  
CATCTGTTTC CTGATGCTGG TGAGCATCGA CCGTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCGG ATGCGCGGGC  
TGCGCTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC  
ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC  
CAACATGCTC CTGAATGTG TGGGCTTCT GCTGCCCTG AGTGTCATCA CTTCTGCAC GATGCAGATC ATGCAGGTGC  
TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCTGGT TGTGCTGCTG  
CTATTATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCT TCCAGCTG  
CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG  
TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG  
TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCTGGAA CGCCAGATTC ACAAACCTGCA  
GGAAGTGGCA GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTA GGATTGAGGG ACAGTTGCTT  
TTCAGCATGG GCCCAGGAAT GCCAAGGAGA CATCTATGCA CGACCTTGGG AAATGAGTTG ATGTCTCCGG TAAACACCG  
GAGACTAAT CTGCCCTGC CCAATTTTGC AGGGAGCATC GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC  
CAAAATCACA ACAGATTAC TGTCTTATT TGCTGCCACA CCTGAGCCAG CCGTCTCTT CCGAGGAGTG GAGGAGGCT  
GGGGGCAGGG AGGAGGAGTA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACCT AGATCTCCAG  
GAGAAGTGC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTCTTTAAT CTATTCAGCT  
AGAAGTTGA AGGACAATTT CTGCAATTAA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT  
TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTGTCTGTAT  
ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACCTAA AGACTCAAGT  
GGGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTTGA TGAGAGGGTG GAGCAGGGTG CTGTGGGTGA TATGGACAGC  
AGAAGGGGGA GCCAGGTTCC AGCTACCAA TACTATTGCA CACCACCTGT CTGCCTC -3' (FRAG. NO:2275) (SEQ. ID  
NO:2454)

5'- CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT  
TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA  
TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GCCCTGCCA ATTTTGCAGG GAGCATGGCT GTGAGGATGG  
GGTGAACCTA CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTGCT TGCCACACT GAGCCAGCCT  
GCTCCTTCCC AGGATGGAG GAGGCTGGG GGGAGGGAGA GGAGTACTG AGCTTCCCTC CCGTGTGTTT TCCGTCCCTG  
CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTGGT GCAATGGCTG AGTGACAAG TGAGTTGTTG  
CCCTGGGTTT CTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC  
CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGTCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA  
TAAGCACATA TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC  
ATCTTGAAG AACTCAAAGA CTCAAGTGGG AACGACTGG CACTGCCACC ACCAGAAAGC TGTTCAGAGA GACGGTCGAG  
CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGAGAG CAAGGTTCCTA GCTCAACCAA TAACTATTGC ACAACCACT  
GTCCCTGCCT CAGTTCCTT TTATGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA  
AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAAGT GGATATGTTT ACTATAAGGA AAAGACACTG  
AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT  
AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCACACC CCGTAGGCC CAACCGCCAC ACACACAGGA GCATTGGAG  
AGAAGGCCAT GTCTTCAAAG TCTGATTGT GATGAGGCAG AGGAAGATAT TTCTAATCGG TCTTGCCAG AGGATCAGAG  
TGTGAGACC CCCCACACC AGCCGGTACC TGGGAAGGGG GAGAGTGCAG GCCTGCTCAG GGAAGTGTCC TGTCTCAGCA  
ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCCACT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG  
GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCATTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC  
TAGAAGCTGG AGAGCTAGAA CCTGGAGAAC TAGAAGCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG  
AACCTGGAGG GGCTAGAAC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG  
AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAAGCTG GAGGGCTAGA ACCTAGAAGG  
GCTAGAACCT GGAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA  
GAACCTGGAG GAGTAGAAC TGCGAGGTTA GAACCTAGAA GGCGTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC  
CTGGAAGGGC TAGAAGCTGT AGAGCTAGAA CATGGAGAGC TAGAAGCCGG CAGGCTAGAA CCTGGCAAGC TAGAAGCTGG  
AGGGAATGAA CCTGGAGGGC TAGAAGCTGG AGAATGAGAA AAATTACAT GGCAAAGAGC CCATAAATCC TGACCAATCC  
AACTCTGAAT TTTAAAGCAA AAGCGTGAAA AAAAAGATTC CCTCCTTACC CCAACCCAC TCTTTTTTCC CACCACCCAC  
TCTCTCTGC CTCAGTAAGT ATCTGGAGGA AGAAAACAGG TGAAGAAGA AGTAAAAACC ATTTAGTATT AGTATTAGAA  
TGAAGTCAAA CTGTGCCACA CATGGTGAAT GAAAAAAGG TGTGTTTTGT CACACAGGGC AGTCATTCAG

CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCCG CAATGGCCAT GTGGGGATCC ACACCTGGTC  
TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC.TGTCCTGTGA  
AAGACTCAAT GAGCTGTTAT GTTGTAACA GGAAGCATTT CACATCCAAA CGAGAAAATC ATGTAAACAT GTGTCTTTTC  
TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAAAAAAA -3' (FRAG. NO:2275) (SEQ. ID NO:2453)

5'- GAGCTCTTCA ATATTTTGT GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT  
CAGAGGGCTT GTGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCCAA CTGGCAAGTC AGGAACTCC AGATTAAGGA  
GCCCCAATGT GGTGGAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGCCTTTCA CTCAGAGGCC  
TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT  
GATGATGGGA TCAGGCTTGA TTGCTGGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG ATGGGCTGGG  
GGGACGTCT CTGGCCCTCC TGCTCTTCC CCAGATCCAC TGGGCCCACT CTTATCTGTT CTCTTCTGAA GGAAGGGTTT  
TAAGGCTTCA AAAAAAATG TTTTGAAAGT CCCTGCCCTT TCCAGTCTCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT  
GCAGATAGTT AGTAAGTCTT TGAGCAAAA TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC GCCATACATC  
TCCGAAGAAA CGGCGCGTG TCTCAGGGGA GCGCAAAAC CCGTACCCAG GAAACAGGAC AGCTTCTGCC ACTGTGCGCC  
TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCCAGGACT CCGCTGCCC ACCTGGCCAC CCTCTGTTA CACCTTCCGC  
GTAAACGCCC ACTGTTTACA TCCAAAATC AGACAAAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG  
TTACGCGAGG CAAATTTATT CACATGGGGC TTCCAGGCC ACTTTGTGTT CAGCCGGGAG GGACGTTTTT GCCGTCCAC  
GACTCCAACG GGCAGCCGGG CTACGCAAA CATGGAATC TTCCAAGAGC CTCCTGGCC CCCAGGGCTC AGAGGGTGGC  
AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCCGCCCA CAGCCAGCCT GGCTCCAGCT GGGCAGGAGT GCAGAGCTCA  
GCTGGAGCG AGGGGAAGT GCCCAGGAGG GTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGCTGTT CCCGCGCCA  
CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGTGGGGAG GGTGGTGACG GTGGGGACAT CAGGCTGCCC CGCAGTACCA  
GGGAGCGACT GAAGTGCCCA TGCCGCTTGC TCCGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG CCTCACCTCT  
GCTGGGAGGA CAACTGTCC CAGCACAGAG GGAGGGAGG AGGGCAGGCA GCGGGAGAA GTTCCCTGT GGTCTGGGG  
AGTTGGGAAA AGTTCCTTC CTTCGGAGG GAGG -3' (FRAG. NO:2275) (SEQ. ID NO:2452)

5'- GCCCTTCAA GATGAGCTGT TCCCGCCGC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGA  
CGTGGTGAC GGTGGGGACA TCAGGCTGCC CCGCAGTAC AGGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGAGAA  
GGTGGGTGCC GGGCAGGGC TGCTCCAGCC GCCTACCTC TCGTGGGAGG ACAAAGTGT CCAGCACAGA GGGAGGGAGG  
GAGGGCAGGC AGCGGGGAGA AGTTCCCTG TGGTCTGGG GAGTT -3' (FRAG. NO:2275) (SEQ. ID NO:2451)

5'- GCCCTTCAA GATGAGCTGT TCCCGCCGC ACTCCAGCTC TGGCTTCTGG GCTCCGAGGA GGGGTGGGA  
CGTGGGGAC ATCAGGCTGC CCCGAGTAC CAGGGAGCGA CTGAAGTGCC CATGCCGCTT GCTCCGAGA AGGTGGGTGC  
CGGGCAGGGG TGCTCCAGC CGCTCACCT CTGCTGGAG GACAACTGT CCCAGCACAG AGGGAGGGAG GGAGGGCAGG  
CAGCGGGAG AAGTTCCCT GTGGTCTGG GAGTT -3' (FRAG. NO:2275) (SEQ. ID NO:2450)

5'- ATGTTCTCTC CTGGAAGAT ATCAATGTTT CTGTCTGTT GTGAGGACTC CGTGCCACC ACGGCTCTT TCAGCGCCA  
CATGCTCAAT GTCACCTTG C AAGGGCCAC TCTTAACGGG ACCTTTGCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG  
GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC  
GTCTTCTGCC TGACAAGAG CAGCTGCAG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC  
CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA  
ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCTGGTG  
AAAACCATGT CCATGGGCGG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT  
CCTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA  
GCTACCCATC CTCTATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCT GAGTGTATC  
ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG  
GGCCACGGTG CTAGTCTGG TTGTGCTGCT GCTATTATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCTGGATA  
CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG  
GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA  
CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA  
TCTCCGTGGA ACGCCAGATT CACAACTGC AGGACTGGG AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG  
AATTTGTGTA AGGATTGAGG GACAGTTGCT T -3' (FRAG. NO:2275) (SEQ. ID NO:2449)

5'- ATGTTCTCTC CTGGAAGAT ATCAATGTTT CTGTCTGTT GTGAGGACTC CGTGCCACC ACGGCTCTT TCAGCGCCA  
CATGCTCAAT GTCACCTTG C AAGGGCCAC TCTTAACGGG ACCTTTGCC AGAGCAAATG CCCCCAAGTG GAGTGGCTGG  
GCTGGCTCAA CACCATCCAG CCCCCCTTCC TCTGGGTGCT GTTCGTGCTG GCCACCCTAG AGAACATCTT TGTCCTCAGC  
GTCTTCTGCC TGACAAGAG CAGCTGCAG GTGGCAGAGA TCTACCTGGG GAACCTGGCC GCAGCAGACC TGATCCTGGC  
CTGCGGGCTG CCCTTCTGGG CCATCACCAT CTCCAACAAC TTCGACTGGC TCTTTGGGGA GACGCTCTGC CGCGTGGTGA  
ATGCCATTAT CTCCATGAAC CTGTACAGCA GCATCTGTTT CCTGATGCTG GTGAGCATCG ACCGCTACCT GGCCTGGTG  
AAAACCATGT CCATGGGCGG GATGCGCGGC GTGCGCTGGG CCAAGCTCTA CAGCTTGGTG ATCTGGGGGT GTACGCTGCT  
CCTGAGCTCA CCCATGCTGG TGTTCCGGAC CATGAAGGAG TACAGCGATG AGGGCCACAA CGTCACCGCT TGTGTCATCA  
GCTACCCATC CTCTATCTGG GAAGTGTTCA CCAACATGCT CCTGAATGTC GTGGGCTTCC TGCTGCCCT GAGTGTATC  
ACCTTCTGCA CGATGCAGAT CATGCAGGTG CTGCGGAACA ACGAGATGCA GAAGTTCAAG GAGATCCAGA CGGAGAGGAG  
GGCCACGGTG CTAGTCTGG TTGTGCTGCT GCTATTATC ATCTGCTGGC TGCCCTTCCA GATCAGCACC TTCTGGATA  
CGCTGCATCG CCTCGGCATC CTCTCCAGCT GCCAGGACGA GCGCATCATC GATGTAATCA CACAGATCGC CTCCTTCATG  
GCCTACAGCA ACAGCTGCCT CAACCCACTG GTGTACGTGA TCGTGGGCAA GCGCTTCCGA AAGAAGTCTT GGGAGGTGTA  
CCAGGGAGTG TGCCAGAAAG GGGGCTGCAG GTCAGAACCC ATTCAGATGG AGAACTCCAT GGGCACACTG CGGACCTCCA  
TCTCCGTGGA ACGCCAGATT CACAACTGC AGGACTGGG AGGGAGCAGA CAGTGAGCAA ACGCCAGCAG GGCTGCTGTG  
AATTTGTGTA AGGATTGAGG GACAGTTGCT T -3' (FRAG. NO:2275) (SEQ. ID NO:2448)

5'- TGATCCTATC ACAACCTGAG AGTAGTTTTT ACTCCATTCA CAGGTGAGGT CATTGTGGTT CAAGGACGTT AAGTAATTC  
CCCAGCTCAC ACGGCTTATA AGTAAGGCAG CCAGGATGTG AACCAGTAG GACTATCTGG CTGCAAAGTC CCCACCCTCC  
CTCGCATCT GTATCTCCA ATCATCTTCA GTGCTTGTG GATAGAAGGT ACGGAAATAC GATGCCACAG ACTGTCCAGG  
AAGACAGAAA CTAGGCAGAT GGCCTGGCCA TGGTCTCAA GCCAGACTGG AATCTCCAGG TCTGGAATGA TATCATTTT  
CTCTTTAAT AATAAATC ACCCACCACA CGGCTTGTG AGGTCAAAG GTGACCACT CCCTTGGGAG GGCCCCGGTT  
GATAAGGAAG GAATGTGAAT CCTCCATCA CGGAAGCTTC AAGGAGGTCA AGGTCCAAC ACTTGAGATT GTTAGTGCTG

TTGGTGGATA CTGCAGAATA TCCAGTGGAG CCTCAGATGA AGAACATGAG GCCCGTTTA GATCCAAGGA TCAGAGGGGG  
CTCTGTAAAGA CCCAGGGGAG TCAGGTGCAC TGGAGCGCGG GCTGCAGAAA ACAGCCTGAG CTCACCTCG GCTTCTCCTT  
GCCCTGGCTG GTTGTCCTTA ACCCTGTCT CCTTCTGGAC CAGTTTTGT CCTTCCCTTG TGACCTGAGG GGTAAACAGCC  
TCTTTTCCAC TTTCTTTCAG CGCCGACATG CTCAATGTCA CCTTGCAAGG GCCACTCTT AACGGGACCT TTGCCAGAG  
CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GCTCAACACC ATCCAGCCCC CCTTCTCTG GGTGCTGTTG GTGCTGGCCA  
CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC  
CTGGCCGCGAG CAGACCTGAT CTGGCCCTG GGGCTGCCCT TCTGGCCCT CACCATCTCC AACAACTTCG ATCTGGCTCTT  
TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC ATGAACCTGT ACAGCAGCAT CTGTTTCTG ATGCTGGTGA  
GCATCGACCG CTACCTGGCC CTGGTGAATA CCATGTCCAT GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC  
TTGGTGATCT GGGGGTGTAC GCTGCTCTG AGCTACCCA TGCTGGTGT CCGGACCATG AAGGAGTACA GCGATGAGGG  
CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC ATCTGGGAAG TGTTACCAA CATGCTCTG AATGCTGTGG  
GCTTCTGCT GCCCTGAGT GTCATCACCT TCTGCACGAT GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG  
TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG TCTGGTGTG GCTGCTGCTA TTCATCATCT CTGGCTGCC  
CTTCCAGATC AGCACCTTCC TGGATACGT GCATCGCTC GCCTCTCT CCAGCTGCCA GGACGAGCG ATCATCGATG  
TAATCACACA GATCGCTCC TTCATGGCT ACAGCAACAG CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC  
TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA  
CTCCATGGGC AACTGCGGA CCTCCATCTC CGTGAACGC CAGATTACA AACTGCAGGA CTGGCAGGG AGCAGACAGT  
GAGCAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA TTGAGGGACA GTTGCTTTT AGCATGGGCC CAGGAATGCC  
AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTGTGA TGCTCCGGT AAAACACCGG AGACTAATTC CTGCCCTGCC  
CAATTTTCA GGGAGCATGG CTGTGAGGAT GGGGTGAAT CACGCACAGC CAAGGACTCC AAATGCACAA CAGCATTACT  
GTTCTTATTT GCTGCCACAC CTGAGCCAGC CTGCTCCTC CCAGGAGTGG AGGAGGCTG GGGAGGGAG AGGAGTGACT  
GAGCTTCCCT CCCGTGTGTT CTCCGTCCCT GCGCCAGCA GACAATTAG ATCTCCAGGA GAACTGCCAT CCACGTTTGG  
TGCAATGGCT GAGTGACAA GTGAGTTGTT GCCCTGGGT TCTTAACT ATCAGCTAGA ACTTTGAAGG ACAATTTCTT  
GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTTGATAAC AACCTGGAGA CCAGGATTTT ATGGTCCCC TCACTGATGG  
ACAAGGAGGT CTGTGCCAAA GAAGAATCAA TAAGCACATA TGAGCACTTC TGTATATCAG TATTGAGCAC TGAGGCA -3'  
(FRAG. NO:2275) (SEQ. ID NO:2447)

5'- CTGCAGAAAA CAGCCTGAGC TCCACCTCGG CTCTCCTTG CCCTGGCTGG TTGTCCTTAA CCCCTGTCTC CTCTGGACC  
AGTTTTTGTG CTTCCTTGT GACCCTGAGG GGTAAACAGC TCTTTTCCAC TTTCTTTCAG CGCCGACATG CTCAATGTCA  
CCTTGCAAGG GCCACTCTT AACGGGACCT TTGCCAGAG CAAATGCCCC CAAGTGGAGT GGCTGGGCTG GCTCAACACC  
ATCCAGCCCC CTCTCTCTG GGTGCTGTTG GTGCTGGCCA CCCTAGAGAA CATCTTTGTC CTCAGCGTCT TCTGCCTGCA  
CAAGAGCAGC TGCACGGTGG CAGAGATCTA CCTGGGGAAC CTGGCCGAG CAGACCTGAT CCTGGCCTGC GGGCTGCCCT  
TCTGGCCAT CACCATCTCC AACAACTTCG ACTGGCTCTT TGGGGAGACG CTCTGCCGCG TGGTGAATGC CATTATCTCC  
ATGAACCTGT ACAGCAGCAT CTGTTTCTG ATGCTGGTGA GCATCGACCG CTACCTGGCC CTGGTGAATA CCATGTCCAT  
GGGCCGGATG CGCGGCGTGC GCTGGGCCAA GCTCTACAGC TTGGTGATCT GGGGGTGTAC GCTGCTCTG AGCTACCCA  
TGCTGGTGT CCGGACCATG AAGGAGTACA GCGATGAGGG CCACAACGTC ACCGCTTGTG TCATCAGCTA CCCATCCCTC  
ATCTGGGAAG TGTTACCAA CATGCTCTG AATGCTGTGG GCTTCTGCT GCCCTGAGT GTCATCACCT TCTGCACGAT  
GCAGATCATG CAGGTGCTGC GGAACAACGA GATGCAGAAG TTCAAGGAGA TCCAGACGGA GAGGAGGGCC ACGGTGCTAG  
TCTGGTGTG GCTGCTGCTA TTCATCATCT GCTGGCTGCC TTCCAGATC AGCACCTTCC TGGATACGCT GCATCGCTC  
GGCATCTCT CTGCTGCCA GGACGAGCG ATCATCGATG TAATCACACA GATCGCTCC TCAATGGCT ACAGCAACAG  
CTGCCTCAAC CCACTGGTGT ACGTGATCGT GGGCAAGCGC TTCCGAAAGA AGTCTTGGGA GGTGTACCAG GGAGTGTGCC  
AGAAAGGGGG CTGCAGGTCA GAACCCATTC AGATGGAGAA CTCCATGGGC AACTGCGGA CCTCCATCTC CGTGAACGC  
CAGATTACA AACTGCAGGA CTGGCAGGG AGCAGACAGT GAGCAACGC CAGCAGGGCT GCTGTGAATT TGTGTAAGGA  
TTGAGGGACA GTTGCTTTT AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA TGAGTTGATG  
TCTCCGGTAA AACACCGGAG ACTAATCTC GNCCTGCCA ATTTGCAAG GAGCATGGCT GTGAGGATGG GGTGAATCA  
CGCACAGCCA AGGACTCCAA AATCACAACA GCATTACTGT TCTTATTGCG TGCCACACCT GAGCCAGCT GCTCCTTCCC  
AGGAGTGGAG GAGGCTGGG GGCAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTT TCCGTCCCTG CCCAGCAAG  
ACAACTTAGA TCTCAGGAG AACTGCCATC CAGCTTGGT GCAATGGCTG AGTGACAAG TGAGTTGTTG CCCTGGGTTT  
CTTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC CCTGATAACA  
ACCTGGAGAC CAGGATTTTA TGGCTCCCT CACTGATGGA CAAGGGAGGT CTGTGCCAAA GAAGAATCCA ATAAGCAT  
ATTGAGCACT TGCTGTATAT GCAGTATTGA GCATGTAGG CAAGAGGGA GAAAGAGAAG GAGCCATCTC CATCTTGAAG  
GAACCAAAG ACTCAAGTGG GAACGACTGG CACTGCCACC ACCGAAAGC TGTTGCGAGA CAGGTGCGAG CAGGGTGTCTG  
TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGTTTCCA GCTCAACCAA TAACTATTGC ACAACCACT GTCCCTGCCT  
CAGTCCCTC TTCTGTAACA TGAAGTCGTT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA AAGCAAAGGG  
TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACCT GGATATGTT ACTATAAGGA AAAGACACTG AGGTCTAGA -3'  
(FRAG. NO:2275) (SEQ. ID NO:2446)

5'- AAATGATAGA CGTCAATAA TTTGTTAAAT GCTTTTAAAT ATGAATGCTT TAAGCCGGGT GCAGTGCCTC ACATCTGTAA  
TCCCAGCAT GCGGGTGGAT TGTGTAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAACTCTC  
ACTCTTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACTG TGATCCAGC TACTCAGGAG GCTGAGACAG  
GAGAATCGCT TGAACCCGGG AGGCAAGGT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA  
GACTCCGTCT CAAAAAATAA AAAAAAATAA AAAAAATTAC GCTTCAACA CATGATCTCT CACCCTGTT GAATTTCTT  
TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCT AGGTCTTCT TCCCTCTGC AAACCTCCCTG CCTTGAAGGT  
TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTGCAAGTG TCCAAACCT GATCCAGCT GTGCTTAGGG GTTCTGCAA  
ACCTTTTCCA GGTGTTAATT ACCTCCCACT CATTCTTGT TTTACCACT CAGCTTTTGT TTTAGTGT TTTGAATTCC  
CTGAACGTAC GTTGTCTGA TCTCACCTC CCAACTGAAT TAGGGAGCT GGGCTTCTGG AAACCCAGGT CGCGGGTGT  
GCAGAGTGGC TGAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTCATGC ACACACACAC ACCACATAC CCACACATGC  
ACACACACAC ACACACCCGC ACTCACACAC TTGGACATGC ATAGACCACA GCTTCCACA CCTTCTAG ACAGGGGTCA  
CTTGGTATCC TGGAGAGAGT GTGAAGTCTT GGAATGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA  
CAAGTCACCA CCAACCCATC TGCGCTTGT TTACCTCCTC TGTGAGGCAA GCACAGAGCC CATGCTGCC CCCCTGATG  
GGAGTGATGT GAAACTTGAA GGGCGGTGAG AGCAAGGGTC GGAATGGAA GGCCCTTGGG AAAAAGGCC CTTTCAACTA

GGGGACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTTGTAATTG GTAAGCCAAG CCCGAAGGGA CTGGAAATAC  
TCAGATGTGT CTGTCTCCCT TATTAGGTTT AAAGTCCCTC AAGACCCTGT CTCCATCACA GTGTCCAGT.CCAGACCCT  
CCTCTGAGCT CCAGACCCTG CTGGACCCAA CCAGCCCTAT GGGGTGCGAT CCCCACCTGC CTGGAATTCT CCAAAGAACC  
TCCCCTTAA CAGTTCACAG CTTTAACAGT TCCAGTCTAA ACACATGACC TTCTCTCTCT AAATCAGCCC CCCATCTCTG  
CCTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGCTCTCACC CCATCCATGT CCAATCAAGC ACTAGGCATG  
TCAGGTTTAC CCTCTAAACT CCTCTGGAAT CAGTCTCTC AGTCTCCATC ATCCAGGTC GAAGCTAATG GGCTAACTGG  
TCCTTGCTTC CACTCTACCC CCACTGCAGT CCGTACTTCC TGAGCAGCAG CCAGGGCCTA ATCGATATTC ACACCAAGCG  
CCAACCTGAC TGAGATATCC TCCTGCACCA TCATCCCTCC ACCCTGTTTA GTTCTGTCTA CCCTCAGTGT TCTCATCAAT  
AATCCACTCC CCTCAGAGG GCGTTTGGGA CCCCATGTTT TATGCTCTCA CAGGACCTTT TGCTTGATTT TCACTGTAC  
TTAGGTCACT TTGCACTTAT TAAGTGACTG AGCAATGTCT GGCTTCTCCA GTAGACTGTC AGCTCCTAGC CATTGTATAC  
CTAGCACCAG TGTGTGGGAG CACGTGACAA ACGTCCAGTG AGTCAGGGAC TCAGCAGTCT CCATTTCTCC GCCCTGCTGG  
AGAATGCGTG TATTTGGCAA TCCCCAGCCC CTGTGCCATC TAACCATCTT TTCTTCTCTG TTCAGCCCCG GTGTGGCCTC  
ACTCACATCC CACTCTGAGT CCAAATGTCT TCTGCTGGA AGATATCAAT GTTCTGTCT GTTCGTGAGG AGTCCGTGCC  
CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCTCAG TCACTAGTT AGGGGAGGTG GGCAGACACC CTGGAGAACT  
CCCTGGAAGG CTCAACTCTC ATGCCCCGGA CAACAGTTGA AGGAACCATG GTGATGTTAA GCCCAAAGAC AAAACCTCTC  
AGGTGTCAA GTCCCTGTTG GAATCTTGGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA  
AGGGCACATT CCTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAAGTTG GAAGTGAAGG GAAGAGAGTT AAACATTAAA  
GTAATACCC AGTGATCAG ACAGCAATGT GCCAGATTGC CTTGGAAACA AAATATCTCC AACACATGGC TGACATTGG  
TGGGAGATCA GAACACCCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAGG ACCTGAGCCA GATGAGAAGC  
AGAGGATAGG GAGATCTGTT CTTGGGGACA GCATTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTGCAACCTG  
CTGCAAGTGC TGCCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCAA  
TTCCGCACTC AGCAGGCATC TTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGG CAGGATCCAT CCCCTGGCT  
ACTGTCTTG TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG  
ACTCTCAAAG CCAGGGGTAT GCAGGAAATG GGTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC  
CCAGGGGAAG TCTTACCTTC AGAGGACTCT GGAAAGGAGG GTGCAAGTTT TCATGGGTGA AGAATTCAGA GCCCAGTAGA  
GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCCTTGGT GGAAGATTCA AAGGTAGGA AACCCAGC CACCAAGAG  
GTAAGTGGG CCAGAGGATC CACTTTCAAG GTGGCAAGTT GGTCCCCC ATGTGGCTGC TTGAGTATCC TCACATGGCG  
GCTCACATCC TTCCAAGTAA GCAATGCAAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC  
ACACCATCCC TGCCACCATT AGTAAGAAGT CCAGCCCAGC TCCAGGAGAA GAGGAAGCAG ATTCCTCTT TTGAAATGAA  
GAATATCAAG TAATTCGGGG GGCATATGAA AGCCACCACA CACCACAGG ATCTTTTATG AGCATACTT TTATACCATC  
ACTGTAGTTC CTAAAGCTC AGGGGCAAG CCACTACTTC TAGCACCACA GTGAAGACCA CGTTACTTC CTCACTCAAC  
CTCTTGCTAC TTCCACCTC TCCTGTCCA CATCTAGTGT CACTTTCCAG AACATACCA CAGCTTCCC AGTCTGTG  
CTCTGCTCAG GCTGTCCCC CTGCTGGTC CACTTGCTT CTTCTGTG CGGTCAAAAT GCTTCTTATC CTCAAGACC  
CAGCTCTAGA GTCACCTCCA ACCCTTACC CACCAGCCC CTCTCAAGT CTGTGCTCCA CAACCCCCCT GCTCCCTCA  
GGGCACCCTC CACCCTCTGG GCCACAGTTG TCAGGAGTCA GGCAGGGCAG GGGCCGGGTG GTGTCTTCT TGTTCTTG  
CACTCAGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTECCCCAG  
TCTGGCTCCA GAGTGCCAGC CAGCTGCTCC TAGAAGAAA CGGACTTTT CTGGGAAATC CCAGAGGTGA TGATCAGTAA  
TCTCTCCCGT GACTCGTAGT TCAGCTCTC CTCCATGAGC CTGACTATCA GTGGACCTC CAGAAAGAGC CCCTTTCTC  
TCTCTACCC ACAGCACAGG GCACTGGGAA AATGCCAAT GAGTCTGCTC TCTGGGTGT GCTTTGGACT TTTAGTGTG  
TCTCGCATCC ACTCTTCAAC TTGAATGTTG CAACAGCCAT GAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC  
CCTACTCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGCTAGGA GTGGAACTCA  
TGCTGTCCA AGCCCCATGC CTCTGTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCCT GCCCTATGTT  
CTGTGAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC  
CACTGATAAT AAGGGTGCAA AATGTAAAT ACTAATGTTT ATTGAGCTA GTGCAGTGC TGGGGCATTT TGCACATTGT  
CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGGT TCAAGGACGT  
TAAGTAACCT CCCAGCGTG ACACGGCTTA TAAGTAAGGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAG  
TCCCCACCC CTCTGCCATC TGTATCTCC AATCACTTCA GTGCTTTGCT GCATAGAAGG TAACGGAAAT CACGATGCCA  
CAGACTGTC AGGAAGACAG AAAGTAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGAATCTCC AGGTCTGGAA  
TGATATCAT TTCTCTTTT AATAAATTAA CTCACCCACC ACACGGCTT GAGAGGCTCA AAGTTGACCA ATCCCTTGG  
GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCTCTCCA TCACGGAAGC TCAAGGAGG TCAAGGGTCC AACACTTGAG  
ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATC CCAGTGGAGC CTCGAGATGA AGAACATGAG GCCCCGTTT  
AGAACCAAGG ATCAGAGGGG GCTCTGTAAG ACCAGGGGA GTCAGGTGCA CTGGAGCGCG GGCATGCAGA AAACAGCCTG  
AGCTCCACCT CGGCTTCTCC TTGTCTGGC TGGTTGCTT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT  
TGTGACCGCT GAGGGGTAAC AGCCTCTTC CACTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGCA AGGGCCACT  
CTTAACGGGA CCTTTGCCA GAGCAAATGC CCCCAGTGG AGTGGCTGG CTGGCTCAAC ACCATCCAGC CCCCCTCTC  
CTGGGTGCTG TTCGTGCTGG CCACCCTAGA GAACATCTTT GTCTCAAGC TCTTCTGCT GCACAAGAGC AGCTGCACGG  
TGGCAGAGAT CTACCTGGG AACCTGGCCG CAGCAGACCT GATCCTGGCC TGGGGCTGC CTTCTGGGC CATCACCATC  
TCCAACAAC TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCAG  
CATCTGTTT CTGATGCTGG TGAGCATCGA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCCG ATGCGCGCG  
TGCGCTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC  
ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCCCTT GTGTATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC  
CAACATGCTC CTGAATGTCG TGGGCTTCT GTGCCCTG AGTGATCA CTTCTGCAC GATGCAGATC ATGCAGGTGC  
TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAG GGAGAGGAGG GCCACGGTGC TAGCTCTGGT TGTGCTGTG  
CTATTCATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCAGCTG  
CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGCTGCCTC AACCCACTGG  
TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG  
TCAGAACCA TTCAGATGGA GAAGTCCATG GGCACACTGC GGACCTCCAT CTCGTGGAA CGCCAGATTC ACAAAGTGA  
GGACTGGGA GGGGAGCAG AGTGAGCAA CGCCAGCAG GCTGCTGTGA ATTTGTGTA GATTGAGGG ACAGTTGCTT  
TTCAGCATGG GCCCAGGAAT GCAAGGAGA CATCTATGA CGACCTGGG AAATGAGTTG ATGTCTCCG TAAACACCG

GAGACTAATT CTTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC  
CAAAATCACA ACAGCATTAC TGTCTTATT TGCTGCCACA CCTGAGCCAG CCTGCTCCTT CCCAGGAGTG GAGGAGGCTT  
GGGGGCAGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTCC CTGCCCCAGC AAGACAACCT AGATCTCCAG  
GAGAACTGCC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT  
AGAACTTTGA AGGACAATTT CTGCAATTAA TAAAGGTTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT  
TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTGTCTGTAT  
ATGCAGTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTTGA AGGAACTCAA AGACTCAAGT  
GGGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTTGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC  
AGAAGGGGGA GCCAGGTTCC AGCTACCAA TACTATTGCA CACCACCTGT CTGCCTC -3' (FRAG. NO:2275) (SEQ. ID  
NO:2445)

5'- CAGATTCACA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT  
TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA  
TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATCTCT GCCCTGCCA ATTTTGACAG GAGCATGGCT GTGAGGATGG  
GGTGAACATCA CGCACAGCCA AGGACTCCAA AATCAACA CACTTACTGT TCTTATTGTC TGCCACACT GAGCCAGCTT  
GCTCCTTCCC AGGAGTGGAG GAGGCTGGG GGGAGGGAGA GGAGTGACTG AGCTTCCCTC CCGTGTGTTT TCCGTCCCTG  
CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGCACAAG TGAGTTGTTG  
CCTGGGTTT CTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC  
CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGTCCCTT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA  
TAAGACATA TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC  
ATCTTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCCAGCA GAGGTCGAG  
CAGGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGGTTCCA GCTCAACCAA TAACTATTGC ACAACCACCT  
GTCCCTGCCT CAGTTCCTT TTATGTAACA TGAAGTCGT GTGAGGGTTA AAGGCAGTAA CAGGTATAAA GTACTTAGAA  
AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAACCT GGATATGTTT ACTATAAGGA AAAGACACTG  
AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT  
AGGTGCTCAT TGGTCCCTT CCACCTGTCA TTCCACCAC CCTGAGGCC CAACCGCCAC ACACACAGGA GCATTTGGAG  
AGAAGGCCAT GTCTCAAAG TCTGATTGT GATGAGGCA AGGAAGATAT TTCTAATCGG TCTTCCCCAG AGGATCACAG  
TGCTGAGACC CCCACCACC AGCCGGTACC TGGGAAGGGG CAGAGTGCAG GCCTGCTCAG GGACTGTTC TGTCTCAGCA  
ACCAAGGGAT TGTCTCTGTC AATCAATGGT TTATTGGAAG GTGGCCCACT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG  
GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCATTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC  
TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG  
AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG  
AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG  
CTAGAACCTG GAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GACTAGACCT AGAAGGCTA  
GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC  
CTGGAAGGGG TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCGG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG  
AGGGAATGAA CCTGGAGGGC TAGAACCTGG AGAATGAGAA AAATTTACAT GGCAAAGAGC CCATAAATCC TGACCAATCC  
AACTCTGAAT TTAAAGCAA AAGCGTGAAG AAAAAGATT CTTCTTACC CCCAACCCAC TCTTTTTTCC CACCACCCAC  
TCTCTCTG CTGCAAGT ATCTGGAGGA AGAAAACAGG TGAAGAAGA AGTAAAAACC ATTAGTATT AGTATTAGAA  
TGAATCAAA CTGTGCCACA CATGGTGAAT AAAAAAGAAA AAAAAGAGGC TGTGTTTTGT CACACAGGGC AGCATTACAG  
CACCAGAGCA CGTGATGGTC TGAGACTCTC TTAGGAGCAG AGCTCTGCC CAATGGCCAT GTGGGGATCC ACACCTGGTC  
TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC TGCTCTGTGA  
AAGACTCAAT GAGCTGTTAT GTTGTAACA GGAAGCATT CACATCCAAA CGAGAAAATC ATGTAAACAT GTGTCTTTTC  
TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAAAAAAA -3' (FRAG. NO:2275) (SEQ. ID NO:2444)

5'- GAGCTCTTCA ATATTTTATG GAAAGCTATA GATGAGGCTC CATAGGGGAT AAAGCACAGA CACACCTTTT  
CAGAGGGCTT GTGACTCTG GGCAGCCTGT CCATAGACCT CTGTCCCAA CTGGCAAAGT AGGAACTCC AGATTAAGGA  
GCCCCAATGT GGTGTAACAG CCAGGTGCAC AGATGAGTCA ACCACACAGC CAGGCCAGGG AGGGCCTTCA CTCAAGAGCC  
TACAGCCAGT TCACAGCCAA GCCAGGGCTA GCGCCAGGCC ACCCATAAAC TGATCTGAGA CTCTGTTTCC CTGTCTCCAT  
GATGATGGGA TCAGGCTTGA TTGCTGTTT GTAGGCTTGT TATGAATCAA GTCACAGGGA AGAGGAGCTG ATGGGCTGGG  
GGGACGTCT CTGGCCCTCC TGTCTCTCC CCAGATCCAC TGGGCCCACT CTATCTGTT CTCTCTGAA GGAAGGGTTT  
TAAGGCTTCA AAAAAAATG TTTTGAAGT CCCTGCCCTT TCCAGTCTCT ACCGTCTCAG CCCTGGGAGT GTAAAGTGCT  
GCAGATAGTT AGTAAGTCTT TGAGCAAAAC TGAGAAAGCC AGCCTGAGCC TTGACATGGG AGAAACCTCC GCCATACATC  
TCCGAAGAAA CGGCCGCTGT TCTCAGGGGA GCGCAACAC CGATACCCAG GAAACAGGAC AGCTTCTGCC ACTGTCTGCC  
TTGGGAGCCG TACGTGGCAT GACAAAGAAA TCCAGGACT CCGCTGCC ACCTGGCCAC CCTCTGTTA CACCTTCCGC  
GTAAACGCCC ACTGTTTACA TCCAAAACTC AGACAAAAA TAACCACCTC AAGAAGATAA ATAATGATAA GAAATAAATG  
TTACGCGAGG CAAATTTATT CACATGGGGC TTCCAGGCC ACTTTGTGT CAGCCGGGAG GGACGTTTTT GCCGTCCAC  
GACTCCAACG GGCAGCCGGG CCTACGCAAA CATGGAATC TTCAAGAGC CTCCCTGGCC CCCAGGGCTC AGAGGGTGGC  
AGAGCGGAGA GCGAAGGTGG CCGCAGCCTT CCGGCCCA CAGCCAGCTT GGCTCCAGT GGGCAGGAGT GCAGAGCTCA  
CTGGAGGCG AGGGGGAAGT GCCAGGAGG CTGATGACAT CACTACCCAG CCCTTCAAAG ATGAGTGTCT GCCGCCCA  
CTCCAGCTCT GGCTTCTGGG CTCCGAGGAG GGGTGGGAC GGTGGTGACG GTGGGACAT CAGGCTGCC CGCAGTACCA  
GGGAGCGACT GAAGTGCCCA TGCCGTTGC TCCGAGAAG GTGGGTGCCG GGCAGGGGCT GCTCCAGCCG CCTCACCTCT  
GCTGGGAGGA CAACTGTCC CAGCACAGAG GGAGGGAGG AGGGCAGGCA GCGGGAGAA GTTCCCTGT GGTCTGGGG  
AGTTGGGAAA AGTCCCTTC CTCCGGAGG GAGG -3' (FRAG. NO:2275) (SEQ. ID NO:2443)

5'- GCCCTTCAA GATGAGCTGT TCCCGCCGC ACTCCAGCTC TGGCTTCTG GCTCCGAGGA GGGGTGGGGA  
CGGTGGTGAC GGTGGGGA TCAGGCTGCC CCGCAGTACC AGGAGCGAC TGAAGTGCCC ATGCCGCTTG CTCCGAGAA  
GGTGGGTGCC GGGCAGGGG TGCTCCAGCC GCTCACCTT TGTTGGGAGG ACAAACCTGC CCAGCAGAGA GGGAGGAGG  
GAGGGCAGGC AGCGGGGAGA AGTTCCCTG TGGTCTGGG GAGTT -3' (FRAG. NO:2275) (SEQ. ID NO:2442)

5'- AAATGATAGA CCGTCAATAA TTTGTAAAT GCTTTTAAA ATGAATGCTT TAAGCCGGGT GCAGTGCTC ACATCTGTAA  
TCCAGCACT TTGGAGCCGA GCGGGTGGAT TGTGTGAGGT CAGGAGTTCG AGACCAACCT GGCCAACATG GCAAACTC  
ACTCTTACC AAAAATACAA AAATTAGCCA GGCATGGTGG CAGGCACCTG TGATCCAGC TACTCAGGAG GCTGAGACAG



GAGAATCGCT TGAACCCGGG AGGCAAGGTT GCAGTGAGCC AAGATTACGC CATTGTACTC CAGCCTGGGT GACAGAGAGA  
GACTCCGTCT CAAAAA AAAAAAAAAA AAAAAATTAC GCTTCAAACA CATGATCTCT CACCACTGTT GAATTTCTT  
TCTATGAGCC CAGGAGGGCC TCTCAGAGAG GAAAGCTCCT AGGTCTTCCT TTCCCTCTGC AAACCTCCCTG CTTGAAGGT  
TCAGAAGGAC TGTGCGTGCT CGTTGCATCC TTTGCAAGTG TCCAAACCTT GATCCCAGCT GTGCTTAGGG GTTCTGCAA  
ACCTTTTCCA GGTGTTAATT ACCTCCCACT TCATTTCCTT TTTACCAACT CAGCTTTTGT TTTTAGTGTG TTTGAATTCC  
CTGAAGTGAC CGTTGTCTGA TCTCCACCTC CCAACTGAAT TAGGGGAGCT GGGCTTCTGG AAACCCAGGT GCCGGGTGTT  
GCAGAGTGGC TGAAGCTGG GATGTGGCAG ATCCGTGGCT ACATTTCATGC ACACACACAC ACCACATAC CCACACATGC  
ACACACACAC ACACACCCGC ACTCACACAC TTGGACATGC ATAGACCACA GCTTTCACA CCCTTCTAG ACAGGGGTCA  
CTTGGTATCC TGGAGAGAGT GTGAAGTCTT GGAATGGAAA GAGGGGGGAT TAAGCCCCAC CTCTAGCCAT GGGACTGAGA  
CAAGTCACCA CCAACCCATC TGCGCTTGT TTACCTCCTC TGTGAGGCAA GCACAGAGCC CATGCTGCC CCCCTGGATG  
GGAGTGATGT GAAACTTGAA GGGCGGTCTG AGCAAGGGTG GGAATGGAA GGCCTTGGG AAAAAAGGCC CTTTCAACTA  
GGGGCACAGA GGAGGCCCTG GGCTGAGAAC TTGACAGCAC CTGTAAATTG GTAAGCCAAG CCCGAAGGGA CTGGAATAC  
TCAGATGTGT CTGTCTCCCT TATTAGGTTT AAAGTCCCTC AAGACCTGT CTCCATACA GTGCTCCAGT CCAGACCCCT  
CCTCTGAGCT CCAGACCCCTG CTGGACCCAA CCAGCCCTAT GGGGTGCGAT CCCCACCTGC CTGGAATTCT CCAAAGAACC  
TCCCCTTTAA CAGTTCACG CTTTAAACAGT TCCAGTCTAA ACACATGACC TTTCTCCTCT AAATCAGCCC CCCATCTCTG  
CCTTTGCAGG AGATGGAAGC CATGACACCT GCCTCGCCCC TGTCTCACC CCATCCATGT CCAATCAAGC ACTAGGCATG  
TCAGGTTTAC CCTCTAACT CCTCTGGAAT CCAGTCTCTC AGTCTCCATC ATCCAGGTC GAAGCTAATG GGCTAACTGG  
TCTTGCTTC CACTCTACC CCAGTGCAGT CCGTACTTCC TGAGCAGCAG CCAGGGCTA ATCGATATTC ACACCAAGCG  
CCAACCTGAC TGAGATATCC TCTGACCA TCATCCCTCC ACCCTGTTA GTTCTGTCA CCTCATGTG TCTCATCAAT  
AATCCACTCC CCTCAGAGC GCGTTTGGGA CCCCATGTTT TATGCTCTCA CAGGACCTTT TGCTTGATTT TCACTGTAC  
TTAGGTCACT TGCAGTTAT TAAGTACTG AGCAATGTCT GGCTTCTCCA GTAGACTGTC AGCTCCTAGC CATTGTATAC  
CTAGCACCAGC TGTGTGGGAG CACGTGACAA ACGTCCAGTG AGTCAGGAGC TCAGCAGTCT CCATTCTCTC GCCCTGCTGG  
AGAATGCGTG TATTTGGCAA TCCCAGCCC CTGTGCCATC TAACCATCTT TCTTCTCTG TTCAGCCCAG GTGTGGCTC  
ACTACATCC CACTGTAGT CCAATGTTT TCTCCCTGGA AGATATCAAT GTTCTGTCT GTTCGTGAGG ACTCCGTGCC  
CACCACGGCC TCTTTCAGGT GAGTCAAAGG GATTCTCAG TTTACTAGT AGGGGAGGTG GGCAGACACC CTGGAGAAT  
CCCTGGAAG CTCAACTCTC ATGCCCCGGA CAACAGTTGA AGGAACCATG GTGATGTAA GCCCAAAGAC AAAACCTCTC  
AGGTGTCAA GTCCCTGTG GAATCTTGG AGCAGAGGGA ATGTTCTGTG GTCTAGAGGA AGAGGGGCTC AGGGAGGAGA  
AGGGCACATT CTTGGTTGTT ATATGTTTCT ATCTATCCCA GATGAACCTG GAAGTGAAGG GAAGAGAGTT AAACATTA  
GTAAATACCC AGTGATCAG ACAGCAATGT GCCAGATTGC CTGGAAACA AAATATCTCC AACACATGGC TGACATTTGG  
TGGGAGATCA GAACACCTA AAGAGAGAAT TTAAGGGGAG GGGGAGGAG ACCTGAGCCA GAGTAGAAGC  
AGAGGATAGG GAGATCTGTT CTTGGGGACA GCAATTTGCAA GAAACAAGGC TGAGGGGTCC ACTCCAACCT CTCACCTCTG  
CTGCAGGTGC TGCTATGAT GAAGATGAGC AGATGGCCAT CTCAGCTGGG GCCACAGTGC ACTGGACCTA TAGTTTCCAA  
TTCCGCACTC AGCAGGCATC TTTCTGATGA TCCGATGGCT TCTCAGAGCC AGGGATGGG CAGGATCCAT CCCCTTGGCT  
ACTGTCTTGC TGAGAAATTT ATAAGCAGCA TCTGGTGCTA TACTTTGGTC TCTAGTGAGT TAGCTCATGA AAGATGATAG  
ACTCTCCAAG CCAGGGGTAT GCAGGAAATG GGTTTTCTGT AGCTACAGAA ATGGGGTTGA GGGTTGGACC AAGGGACTAC  
CCAGGGGAAG TCTTACCTC AGAGGACTCT GGAAGGAGG CTGCAAGTTT TCATGGGTCA AGAATTCAGA GCCCAGTAGA  
GACAGCTTAT CTCTGTTCCA AGATGTCTGG GGCTTGGTT GGAAGTTTCA AAGGTAGGA AACCAAGGAG CACCAAAAGC  
GTAAGTGGG CCAGAGGATC CACTTTCAAG GTGGCAAGTT GGTCCCCC ATGTGGCTGC TTGATATCC TCACATGGCG  
GCTCAGATCC TTCCAAGTAA GCAATGCAA AGGCCAAGAA AGATGCTGCA AAGATGTTAT GACCTAGCCT CAGAAATCAC  
ACACCATCCC TGCCACCAT AGTAAGAAGT CCAGCCACG TCCAGGAGAA GAGGAAGCAG ATTCCTCCTT TTGAAATGAA  
GAATATCAAG TAATTCGGGG GGCATATGAA AGCCACCACA CACCACAGG ATCTTTTITAG AGCATACTTC TTATACCATC  
ACTGTAGTTC CTTAAGACTC AGGGGCAAAG CCTCACTTCC TTAGACCCA GTGAAGACCA CGCTTACTCC CTCCTCAAC  
CTCTGTCTAG GCTGTTCCCC CTGCTGGTC CACTTGTCT CTTTCTGTG CGGTCAAAT CTTCTTATC CTTCAAGACC  
CAGCTCTAGA GTCACCTCCA ACCCTTACC CACCAGCCCC CTCTCCAAGT CTGTGTCCA CAACCCCCCT GCTCCCTCCA  
GGGCACCTC CACCCTCTGG GCCACAGTTG TCAGGAGTCA GGCAGGGCAG GGGCCGGGTG GTGTCTTCTT TGTGTTCTT  
CACTCAGGGC AGAGCTCAGC ACAGAGCAGA CGCTCAAAAA ACATTTAAAG GATAGAAGCA TTGATTTGTG GGTCCCCAG  
TCTGGCTCCA GGATGCCAGC CAGCTGCTCC TAGAAGCAA CGGACTTTT CTGGGAAATC CCAGAGGTGA TGATCAGTAA  
TCTCTCCCGT GACTCGTAGT TCAGCTCTC TCCATGAGC CTGACTTCA GTGGACCTC CAGAAAGAGC CCTTTTCTT  
TCTCTACCC ACAGCACAGG GCACTGGGAA AATGCCAAT GAGTCTGCC TCTGGGTTGT GCTTTGACT TTTGAGTG  
TCTCGCATCC ACTCTTCAAC TTGAATGTT CAACAGCCAT GAAAAAGAA ATGCAAAGCG ATTCAGGATG AGAGCAATAC  
CCTACTCAA AGAAGGCAAC ATAGAAGCTC AGAGAGATCA AGCAATTTGC CCAAGACCAC ACAGTAGGA GTGGAATCA  
TGGCTGTCCA AGCCCCATGC CTCTGCTGAA GGTAGAGATG AATTACAGCA ACAAGTCTAG AAAGGTGCTT GCCTATGTT  
CTGTAGTCT TGCCTAAGAA TGAAAGAGGA GCCAGTGGGT TAAAGATGAG GTCACCAACA ACGGTGGTGT TGGAGTTTAC  
CACTGATAAT AAGGGTGCAA AATGTAAATT ACTAATGTTT ATTGAGCTTA GTGAGTGGC TGGGGCTTGT TGCACATTG  
CTCTGATCCC TATGACAACC CTGAGAGGTA GTGGTTTAA CTGCCATGTT ACAGGTGAGG TCATTGTGTT TCAAGGACGT  
TAAGTAACT CCCCAGCGT ACACGGCTTA TAAGTAAAGC AGCCAGGATG TGAACCCAGT AGGACTATCT GGCTGCAAAG  
TCCCCACCC CCTCGCCATC TGTATCCTC AATCACTTCA GTGCTTGTG CATAGAAGG TAACGGAAAT CAGATGCCA  
CAGACTGTCC AGGAAGACAG AAACAGGCA GATGGGCTGG CCATGGTCTC CAAGCCAGAC TGAATCTCC AGGTCTGGAA  
TGATATCTT TTTCTTTT AATAAATTA CTCACCCACC ACACGGCTT GAGAGGCTCA AAGTTGACCA ACTCCCTTGG  
GAGGGCCCCG GTTGATAAGG AAGGAACGTG AATCTCTCCA TCACGGAAGC TCAAGGAGG TCAAGGGTCC AACACTTGAG  
ATTGTTAGTG CTGTTGGTGG ATACTGGCCA AGGAAATATC CAGTGGAGC CTCGAGATGA AGAATCATGAG GCCCCGTTT  
AGAACCAAGG ATCAGAGGGG GCTCTGTAAG ACCCAGGGGA GTCAGGTGCA CTGGAGCGG GGCATGCAGA AAACAGCCTG  
AGCTCCACCT CGGCTTCTC TTGCTCTGGC TGGTTGTCT TAACCCCTGT CTCCTTCTGG ACCAGTTTTT GTCCTTCCCT  
TGTGACCGCT GAGGGGTAAC AGCTCTTTC CACTTCTTT CAGCGCCGAC ATGCTCAATG TCACCTTGA AGGGCCCACT  
CTTAACGGGA CTTTGGCCA GAGCAAATGC CCCCAGTGG AGTGGCTGG CTGGCTCAAC ACCATCCAGC CCCCCTTCT  
CTGGGTGCTG TCTGTGCTGG CCACCTAGA GAACATCTTT GTCCTCAGCG TCTTCTGCT GCACAAGAGC AGCTGCACGG  
TGGCAGAGAT CTACCTGGG AACCTGGCG CAGCAGACCT GATCCTGGCC TGCGGGCTGC CTTCTGGGC CATCACCATC  
TCCAACAAC TCGACTGGCT CTTTGGGGAG ACGCTCTGCC GCGTGGTGAA TGCCATTATC TCCATGAACC TGTACAGCA

CATCTGTTTC CTGATGCTGG TGAGCATCGA CCGCTACCTG GCCCTGGTGA AAACCATGTC CATGGGCGCGG ATGCGCGCGG  
TGCGCTGGGC CAAGCTCTAC AGCTTGGTGA TCTGGGGGTG TACGCTGCTC CTGAGCTCAC CCATGCTGGT GTTCCGGACC  
ATGAAGGAGT ACAGCGATGA GGGCCACAAC GTCACCGCTT GTGTCATCAG CTACCCATCC CTCATCTGGG AAGTGTTCAC  
CAACATGCTC CTGAATGTCG TGGGCTTCTT GCTGCCCTG AGTGTCTATCA CTTTCTGCAC GATGCAGATC ATGCAGGTGC  
TGCGGAACAA CGAGATGCAG AAGTTCAAGG AGATCCAGAC GGAGAGGAGG GCCACGGTGC TAGTCTCTGGT TGTGCTGCTG  
CTATTCATCA TCTGCTGGCT GCCCTTCCAG ATCAGCACCT TCCTGGATAC GCTGCATCGC CTCGGCATCC TCTCCAGCTG  
CCAGGACGAG CGCATCATCG ATGTAATCAC ACAGATCGCC TCCTTCATGG CCTACAGCAA CAGTGCCTC AACCCACTGG  
TGTACGTGAT CGTGGGCAAG CGCTTCCGAA AGAAGTCTTG GGAGGTGTAC CAGGGAGTGT GCCAGAAAGG GGGCTGCAGG  
TCAGAACCCA TTCAGATGGA GAACTCCATG GGCACACTGC GGACCTCCAT CTCCGTGGAA CGCCAGATTG ACAAACCTGCA  
GGACTGGGCA GGGAGCAGAC AGTGAGCAAA CGCCAGCAGG GCTGCTGTGA ATTTGTGTAA GGATTGAGGG ACAGTTGCTT  
TTCAGCATGG GCCCAGGAAT GCCAAGGAGA CATCTATGCA CGACCTTGGG AAATGAGTTG ATGTCTCCGG TAAAACACCG  
GAGACTAATT CCTGCCCTGC CCAATTTTGC AGGGAGCATG GCTGTGAGGA TGGGGTGAAC TCACGCACAG CCAAGGACTC  
CAAAATCACA ACAGCATTAC TGTCTTATT TGCTGCCA CTTGAGCCAG CTGCTCCTT CCCAGGAGTG GAGGAGGCTT  
GGGGGACGGG AGAGGAGTGA CTGAGCTTCC CTCCCGTGTG TTCTCCGTC CTGCCCCAGC AAGACAACTT AGATCTCCAG  
GAGAAGTGC ATCCAGCTTT GGTGCAATGG CTGAGTGCAC AAGTGAGTTG TTGCCCTGGG TTTCTTTAAT CTATTCAGCT  
AGAACTTTGA AGGACAATTT CTTGCATTAA TAAAGGTAA GCCCTGAGGG GTCCCTGATA ACAACCTGGA GACCAGGATT  
TTATGGCTCC CCTCACTGAT GGACAAGGAG GTCTGTGCCA AAGAAGAATC CAATAAGCAC ATATTGAGCA CTGTGCTGAT  
ATGCACTATT GAGCACTGTA GGCAAGAGGG AAGAAAGAGA AGGAGCCATC TCCATCTGA AGGAACTCAA AGACTCAAGT  
GGGAACGACT GGGCACTGCC ACCACCAGAA AGCTGTTTGA TGAGACGGTC GAGCAGGGTG CTGTGGGTGA TATGGACAGC  
AGAAGGGGGA GCCAGGTTCC AGCTACCAA TACTATTGCA CACCACCTGT CTGCTC -3' (FRAQ. NO: ) (SEQ. ID NO  
2441)

5'-CAGATTACAA AACTGCAGGA CTGGGCAGGG AGCAGACAGT GAGCAAACGC CAGCAGGGCT GCTGTGAATT  
TGTGTAAGGA TTGAGGGACA GTTGCTTTTC AGCATGGGCC CAGGAATGCC AAGGAGACAT CTATGCACGA CCTTGGGAAA  
TGAGTTGATG TCTCCGGTAA AACACCGGAG ACTAATTCCT GCCTGCCCA ATTTGCGAG GAGCATGGCT GTGAGGATGG  
GGTGAACCTA CGCAGAGCCA AGGACTCCAA AATCACAAGA GCATTACTGT TCTTATTTG TGCCACACT GAGCCAGCTT  
GCTCTTCCC AGGAGTGGAG GAGGCTGGG GGGAGGAGA GGAGTACTG AGCTTCCCTC CCGTGTCTTC TCCGCTCCCTG  
CCCCAGCAAG ACAACTTAGA TCTCCAGGAG AACTGCCATC CAGCTTTGGT GCAATGGCTG AGTGACAAG TGAGTTGTTG  
CCCTGGGTTT TTTAATCTA TTCAGCTAGA ACTTTGAAGG ACAATTTCTT GCATTAATAA AGGTTAAGCC CTGAGGGGTC  
CCTGATAACA ACCTGGAGAC CAGGATTTTA TGGCTCCCT CACTGATGGA CAAGGAGGTC TGTGCCAAAG AAGAATCCAA  
TAAGCACATA TTGAGCACTT GCTGTATATG CAGTATTGAG CACTGTAGGC AAGACCCAAG AAAGAGAAGG AGCCATCTCC  
ATCTGAAGG AACTCAAAGA CTCAAGTGGG AACGACTGGG CACTGCCACC ACCAGAAAGC TGTTCCAGCA GACGGTCCAG  
CAGGTGCTG TGGGTGATAT GGACAGCAGA AGGGGGAGAC CAAGTTTCCA GCTCAACCAA TAACATTGC ACAACCACT  
GTCCCTGCTT CAGTTCCCTT TTATGTAACA TGAAGTCGTT GTGAGGTTA AAGGCAGTAA GAAGATATAA GATCTAGAA  
AAGCAAAGGG TGCTACGTAC ATGTGAGGCA TCATTACGCA GACGTAAGT GGATATGTTT ACTATAAGGA AAAGACACTG  
AGGTCTAGAA ATAGCTCCGT GGAGCAGAAT CAGTATTGGG AGCCGGTGGC GGTGTGAAGC ACCAGTGTCT GGCACACAGT  
AGGTGCTCAT TGGCTCCCTT CCACCTGTCA TTCCACCAC CCTGAGGCCC CAACCGCCAC ACACACAGGA GCATTTGGAG  
AGAAGGCCAT GTCTTCAAAG TCTGATTTGT GATGAGGCA AGGAAGATAT TTCTAATCGG TCTTGCCCAG AGGATCACAG  
TGCTGAGACC CCCCACCACC AGCCGTACC TGGGAAGGGG GAGAGTGCAG GCCTGCTCAG GGACTGTTCC TGTCTCAGCA  
ACCAAGGGAT TGTTCCTGTC AATCAATGGT TTATTGGAAG GTGGCCAGT ATGAGCCCTA GAAGAGTGTG AAAAGGAATG  
GCAATGGTGT TCACCATCGG CAGTGCCAGG GCAGCACTCA TTCATTGAT AAATGAATAT TTATTAGCTG GTTGGAGAGC  
TAGAACCTGG AGAGCTAGAA CCTGGAGAAC TAGAACCTGG AGGGCTAGAA CCTGGAGAGG CTAGAACCAA GAAGGGCTAG  
AACCTGGAGG GGCTAGAACC TAGAGAAGCT AAAACCTGAG CTAGAAGCTG GAGGACTAGA ACCTGGAGGG CTGGAATCTG  
AAGGGCTAGA ACCTGGAGGG CTGGAATCTG GAGAGCTAGA ACCTGGAGGG CTAGAACCTG GAGGGCTAGA ACCTAGAAGG  
GCTAGAACCT GGAGGGCTGG AATCTGGAGA GCTAGAACCT GGAGGGCTAG AACCTGGAGG GCTAGAACCT AGAAGGGCTA  
GAACCTGGAG GGCTAGAACC TGGCAGGTTA GAACCTAGAA GGGCTAGAAC CTGGAGAGCC AGAACCTGGA GGGCTAGAAC  
CTGGAAGGGC TAGAACCTGT AGAGCTAGAA CATGGAGAGC TAGAACCCGG CAGGCTAGAA CCTGGCAAGC TAGAACCTGG  
AGGGAATGAA CCTGGAGGGC TAGAACCTGG AGAATGAGAA AAATTTACAT GGCAAAGAGC CCATAAATCC TGACCAATCC  
AATCTGAAT TTTAAAGCAA AAGCGTGAAA AAAAAGATTG CCTCCTTACC CCAACCCAC TCTTTTTTCC CACCACCCAC  
TCTCTCTGC CTCAGTAAGT ATCTGGAGGA AGAAAACAGG TGAAGAAGA AGTAAAAACC ATTAGTATT AGTATTAGAA  
TGAAGTCAA CTGTGCCACA CATGGTGAAT GAAAAAAGG TGTGTTTTGT CACACAGGGC AGTCATTACG  
CACCAGCA CGTGATGTC TGAGACTCTC TTAGGAGCAG AGCTTGCCG CAATGGCCAT GTGGGGATCC ACACCTGGTC  
TGAGGGGCAA CTGAGTCTGC GGGAGAAGAG CGGCCCTATG CATGGTGTAG ATGCCCTGAT AAAGAACATC TGTCTGTGA  
AAGACTCAAT GAGCTGTTAT GTTGTAACA GGAAGCATTT CACATCCAAA CGAGAAAATC ATGTAACAT GTGTCTTTTC  
TGTAGAGCAT AATAAATGGA TGAGGTTTTT GCAAAAAAAA AAAAAAAA -3' (FRAQ. NO: ) (SEQ. ID NO 2431)

5'-GGTGBCBTGBCBTGTCGGCGC-3' (FRAG. NO:2276) (SEQ. ID NO:2287)

5'-GGTCCCCTTBBGCGTGGGCC-3' (FRAG. NO:2277) (SEQ. ID NO:2288)

5'-GCCAGCCCAGCCACTCCACTTGGGGGC-3' (FRAG. NO:2278) (SEQ. ID NO:2289)

5'-GGGTGGCCAGCAGCAACACGACCCAGAGGAGGGGGC-3' (FRAG. NO:2279) (SEQ. ID NO:2290)

5'-GGCCAGAAAGGGCAGCCCGCAGCCAGGATCAGTCTGTCGGCC-3' (FRAG. NO:2280) (SEQ. ID NO:2291)

5'-GGAGATAATGGCATTACACACGCGC-3' (FRAG. NO:2281) (SEQ. ID NO:2292)

5'-GGCCAGCGCAGCCGCGCATCCGGCC-3' (FRAG. NO:2282) (SEQ. ID NO:2293)

5'-GGGTTCTGACCTGCAGCCCC-3' (FRAG. NO:2283) (SEQ. ID NO:2294)

5'-GTCTCCTTGGCATTCTTGGGCC-3' (FRAG. NO:2284) (SEQ. ID NO:2295)

5'-CAGTCACTCTCTCCTGCCCC-3' (FRAG. NO:2285) (SEQ. ID NO:2296)

5'-CTTGCTGGGGCAGGGACGG-3' (FRAG. NO:2286) (SEQ. ID NO:2297)

5'-GGTGBCBTGBCBTGTCGGCGC-3' (FRAG. NO:2287) (SEQ. ID NO:2298)

5'-GGTCCCCTTBBGCGTGGGCC-3' (FRAG. NO:2288) (SEQ. ID NO:2299)

5'-GCCAGCCCAGCCACTCCACTTGGGGGC-3' (FRAG. NO:2289) (SEQ. ID NO:2300)

5'-GGGTGGCCAGCACGAACAGCACCCAGAGGAAGGGGGGC-3' (FRAG. NO:2290) (SEQ. ID NO:2301)  
5'-GGCCCAAGAGGGCAGCCCGCAGGCCAGGATCAGGTCTGCTCGGCC-3' (FRAG. NO:2291) (SEQ. ID NO:2302)  
5'-GGAGATAATGGCATTACACGCGGC-3' (FRAG. NO:2292) (SEQ. ID NO:2303)  
5'-GGCCAGCGCACGCCGCGCATCCGGCCC-3' (FRAG. NO:2293) (SEQ. ID NO:2304)  
5'-GGGTCTGACCTGCAGCCCC-3' (FRAG. NO:2294) (SEQ. ID NO:2305)  
5'-GTCTCCTTGGCATTCTGGGCC-3' (FRAG. NO:2295) (SEQ. ID NO:2306)  
5'-CAGTCACTCTCTCCCTGCCCC-3' (FRAG. NO:2296) (SEQ. ID NO:2307)  
5'-CTTGCTGGGCGAGGACGG-3' (FRAG. NO:2297) (SEQ. ID NO:2308)  
5'-CCGTGTTGTCBGTGGTCTG-3' (FRAG. NO:2298) (SEQ. ID NO:2309)  
5'-CCCGTTTGBGGTBTGGC-3' (FRAG. NO:2299) (SEQ. ID NO:2310)  
5'-GCTCCBCCBBTTCCTTTTCTCC-3' (FRAG. NO:2300) (SEQ. ID NO:2311)  
5'-TTGTTTTCGTTTCTCTTG-3' (FRAG. NO:2301) (SEQ. ID NO:2312)  
5'-CCGTCTGTGGTT-3' (FRAG. NO:2302) (SEQ. ID NO:2313)

### **β2 Adrenergic Receptor Kinase Nucleic Acids and Antisense Oligonucleotide Fragments**

5'- GCCCGCGCCG CCAAGATGGC GGACCTGGAG GCGGTGCTGG CCGACGTGAG CTACCTGATG GCCATGGAGA  
AGAGCAAGGC CACGCCGGCC GCGCGGCCA GCAAGAAGAT ACTGTGCCC GAGCCAGCA TCCGAGTGT CATGCAGAAG  
TACCTGGAGG ACCGGGGCGA GGTGACCTTT GAGAAGATCT TTTCCAGAA GCTGGGTAC CTGCTCTCC GAGACTTCTG  
CCTGAACCAC CTGGAGGAGG CCAGGCCCTT GGTGGAATTC TATGAGGAGA TCAAGAAGTA CGAGAAGCTG GAGACGGAGG  
AGGAGCGTGT GCGCCGACG CGGGAGATCT TCGACTCATA CATCATGAAG GAGCTGCTGG CCTGCTCGCA TCCCTTCTCG  
AAGAGTGCCA CTGAGCATGT CCAAGGCCAC CTGGGGAAGA AGCAGGTGCC TCCGGATCTC TTCCAGCCAT ACATCGAAGA  
GATTTGTCAA AACCTCCGAG GGGACGTGTT CCAGAAATTC ATTGAGAGCG ATAAGTTCAC ACGGTTTTGC CAGTGAAGA  
ATGTGGAGCT CAACATCCAC CTGACCATGA ATGACTTCAG CGTGCATCGC ATCATTGGGC GCGGGGGCTT TGGCGAGGTC  
TATGGGTGCG GGAAGGCTGA CACAGGCAAG ATGATCGCCA TGAAGTGCCT GGACAAAAAG CGCATCAAGA TGAAGCAGGG  
GGAGACCCTG GCCCTGAACG AGCGCATCAT GCTCTCGCTC GTACAGCATG GGGACTGCCC ATTCATTGTC TGCATGTCT  
ACGCGTTCCA CACGCCAGAC AAGCTCAGCT TCATCTGGA CCTCATGAAC GGTGGGGACC TGCATACCA CCTCTCCAG  
CACGGGTCT TCTCAGAGG TGACATGCGC TTCTATGCGG CCGAGATCAT CCTGGGCTG GAGCACATGC ACAACCGCTT  
CGTGGTCTAC CGGGACCTGA AGCCAGCCAA CATCCTTCTG GACGAGCATG GCCACGTGCG GATCTCGGAC CTGGGCTGG  
CCTGTGACTT CTCCAAGAAG AAGCCCCATG CCAGCGTGGG CACCCACGGG TACATGGCTC CGGAGGTCTC GCAGAAGGGC  
GTGGCCTACG ACAGCAGTGC CGACTGGTTC TCTCTGGGT GCATGCTCT CAAGTTGCTG CGGGGGCACA GCCCTTCCG  
GCAGCACAAG ACCAAAGACA AGCATGAGAT CGACCGCATG ACGCTGACGA TGGCCGTGGA GCTGCCCGAC TCCTTCTCCC  
CTGAACTACG CTCCTGCTG GAGGGGTTGC TGCAGAGGA TGTCAACCGG AGATTGGGT GCCTGGGCGG AGGGGCTCAG  
GAGGTGAAAG AGAGCCCCCT TTTCCGCTCC CTGGACTGGC AGATGGTCTT CTTGCAGAAG TACCCTCCCC CGCTGATCCC  
CCCACGAGGG GAGGTGAACG CGGCCGACGC CTTGACATT GGCTCCTTCG ATGAGGAGGA CACAAAAGGA ATCAAGTTAC  
TGGACAGTGA TCAGGAGCTC TACCGBAACT TCCCCCTCAC CATCTCGGAG CGGTGGCAGC AGGAGGTGGC AGAGACTGTC  
TTCGACACCA TCAACGCTGA GACAGACCGG CTGGAGGCTC GCAAGAAAGC CAAGAACAAG CAGCTGGGCC ATGAGGAAGA  
CTACGCCCTG GGCAAGGACT GCATCATGCA TGGTACATG TCCAAGATGG GCAACCCCTT CTGACCCAG TGGCAGCGGC  
GGTACTTCTA CTGTTCCTCC AACCGCCTCG AGTGGCGGGG CGAGGGCGAG GCCCGCAGA GCCTGCTGAC CATGGAGGAG  
ATCCAGTCGG TGGAGGAGAC GCAGATCAAG GAGCGCAAGT GCCTGCTCTT CAAGATCCGC GGTGGGAAAC AGTTCATTTT  
GCAATGCGAT AGCGACCTG AGCTGGTGCA TGGAGGAAG GAGTGGCGC ACGCTACCG CGAGGCCAG CAGCTGGTGC  
AGCGGGTGCC CAAGATGAAG AACAAGCCGC GCTCGCCGT GGTGGAGCTG AGCAAGGTGC CGTGGTCCA GCGCGGCAGT  
GCCAACGGCC TCTGACCCGC CCACCCGCCT CCAGGAAGCT ACCTGGAGGA GGTGAGTCTT AGCGGATGAG TAGGAGTTGT  
CCACGGAGGA AGGTACACAG AAGGGCTTCC AGGCCAGGA AACAGCAGAG GCACAGAAGT GAGAATGGGT GGGTGAGTTG  
GTGGGGAAC TCCAGGTGCA GAGGATGGTA GCGAAACAAA CTGGAGCAAT AAGGTCCAAG TCCTCAAGA TCTTGACTTG  
CAGATTAAGG AGTTTGTTC CTAATCTGC TTTGGGCAGA GTGTGGTGAG TCCTAGAGAC CCTCTAGGT CTCTCTCTC  
AGTAGCCCCA GAAGGCCTGG AGAGCTGCTT CTGGTGCCA AGCAGGCAGT GACTCCATCA GATCTAGATT TGGGAAAAGC  
ATCCCTGATC AGGGCTGCA TCAGGGCAGT GGCTGGCCAT GAGGACCTG AGAAGTAGAC AGATTACCG AGATTCTCAG  
AAGGCCAGC AGGAGACTAT GGTGACAAAT TAGATTAGAG AAGGGGAGAG AATGAAGGAG CAGTTGGGGT  
AAAAGAAAAA TGAGGCTGAC ATGGGTATAT GGTGGCGGAG TGACTACCA CCCACTGAGA GGAGAACCCT ACAAGCTCTG  
ACATGCTCTG GTTCCAGGTT CTGTTGGGGC TGATCCAAGA TGGTAGCCTA GAGGTGCACA GAGATGGGGG CCTTGCTTG  
CAAAAGGATG CTGGCTGCTG GCCACAGCA TGGTAATGAG ATTTGAGCTT TATGTGCCA GGGCTGGGAG GAGGGTCTG  
TCACTTTGAA AGCAAAGAGA GGCTCTAGAG AGGGGCATGT TGAGATAGGA ATGCTGCCTT GAGACACCTG GCTTCCCA  
CTCTGGGTGG CTCTCAGCAG GGTGGGTTTC CCCTGCCAGG CAGCACTGAA CCTCTGTGCG CTTCGGCTG GGAGAGTTTT  
TACCGTAACT ACATGTGGAA CCATCTGAA GGAACATCTG GATGGGATGG GGTACAGGGA AGGGAGCTGC CAAGAGTGCT  
GGCCAGGGAC TTGGTCTAT GAGCTGGTTG GGGGTGGGG TTGGGTGCAG GGTACTTGAT CCTGAGTGGG CCTTCTGCGG  
CCAGGTTGG CTCTAGAGTA GGAGGGGTGG GATCGGGAT GGGGGAAGCC TGTAAGTGG CTGCAAGTTG CAGGTCCAG  
GTTCTGGGTG ACCTACTAAG GATTCTGGGT CCAGTGTGGG GACGTCTAG TCCAGTCTC GTGTCCACAG  
TTCTGGGTGT TGAGTCTAGG ACAGTGATCT GGAGTTGACA GTCCAATCTA GGTCTGAGTC CTGACCCCAA GTCTAGAGTT  
CAGGGTCATG GTAGTAGCCT AGGGTCAGAA TCAAGGTTGG GGTCAAGTA CAGGATGGGA TCGAGGTGAT GGTCCAAAAT  
CTGGATCTGG GGACCTGTTG GGGGTCTGAG GTGAGTGTG CAGTCTGGGT ATGGCGTTGG AGACCCAGG CTGTGATCTG  
AGGTCATGGT TAGAGTCTCA GGTGGTGGGC CAAGGTTTGA GTCTGGGGTC CTGTTGGAG TCTGGTGCA GGTCTGGAC  
TGCGTCCAAG GTCAGGAGT CCGGGGTTAT AGCCAGGGTC TGAGATGAAA GTCCAGATG GTGTTAGAG GTCTGAATCT  
GTGTCTGGT GAGCGTCCAG GTTCCCTGTG ATCAGGTTG GTGTCAGGGC TGCGGCCGA CTGGGGAGCC TGGGATCCAG  
AGATGTGACC CGAGGTTGTG CTCAGAGAAT GGTCTCGGG TCGTCTTCGT GCCGGGTCCC TGTCGTGTT CAGGCCCGG  
TCTCCGTCCA GCATCGAGG CCGAGGTCAG GGCCAGGGTC TGAGCCCGC GTCCAGGTC TGGTTCGGG TCAGATTCCG  
CGCGGCTCC AGGGGGCGCC GTCGCCGCC CTCGCGGGCT CGCTGGCGTT GTCCGCGCA GGCGGGGCC

GAGGCGGCGG CGGCTCCGGG GGC CGCGGGCC GGGCGGCGG GCGGCGGCG CCCCAGCTGC AGTCCCGGCG GGAGCGGAGC  
GCGAAGCGCG GGGCGGGGCC CGGAGCCGCG GCCATGGGGC GCGCGCGCT GTGAGCGGCG GCGAGCGGAG CCGCGGGCGC  
CGAGCAGGGC CAGGCGGGAG CGTCGGCGCC CGAGGCCGAG CGAGCCGCG CCGGGCCGG CCGAGCGCCG  
AGCGAGCAGG AGCGGCGGCG GCGGCGGCG CCGCGGGAGG AGGCAGCGCC GCCGCAAGA TGGCGGACCT  
GGAGGCGGTG CTGGCCGACG TGAGCTACCT GATGGCCATG GAGAAGAGCA AGGCCACGCC GCGCGCGCG GCCAGCAAGA  
AGATACTGCT GCCCGAGCCC AGGTGAGGAG AAGCT-3' (FRAG. NO. ) (SEQ. ID NO:2430)

5'-CCAGGAAGCT ACCTGGAGGA GGTGAGTCTT AGCGGATGAG TAGGAGTTGT CCACGGAGGA AGGTACACAG  
AAGGGCTTCC AGGCCAGGA AACAGCAGAG GCACAGAAGT GAGAATGGGT GGGTGAGTTG GTGGGAAAC TCCAGGTGCA  
GAGGATGGTA GCGAAACAAA CTGGAGCATT AAGGTCCAAG TCCTCCAAGA TCTTGACTTG CAGATTAAGG AGTTTGTTC  
CCTAATCTGC TTTGGGCAGA GTGTGGTGAG TCCTAGAGAC CCCTCTAGGT CTCTCTCTC AGTAGCCCCA GAAGGCTGG  
AGAGCTGCTT CTGGGTGCCA AGCAGGCAGT GACTCCATCA GATCTAGATT TGGGAAAAGC ATCCCTGGTC AGGGCCTGCA  
TCAGGCGAGT GGCTGGCCAT GAGGACCTG AGAAGTAGAC AGATTACCG AGATTCTCAG GAGGCCAGAC AGGAGACTAT  
GGTGACAAAT TAGATTAGAG AAGGGGAGAG AATGAAGGAG CAGTTGGGT AAAAGAAAAC TGAGGCTGAC ATGGGTATAT  
GGGTGGCGAG TGACTACCA CCCACTGAGA GGAGAACCTC ACAAGCTCTG ACATGCTCTG GTTCCAGGTT CTGTGGGGC  
TGATCCAAGA TGGTAGCCTA GAGGTGCACA GAGATGGGG CTTGTCTTG CAAAAGGATG CTGGCTGCTG GCCCAGCA  
TGGTAATGAG ATTTGAGCTT TATGTGCCA GGGCTGGGAG CCGTCTCTG TCACCTTGAA AGCAAAGAGA GGCTCTAGAG  
AGGGGCATGT TGAGATAGGA ATGCTGCTT GAGACACCTG GCTTTCCCA CTCTGGGTGG CTCTCAGCAG GGTGGGTTT  
CCCTGCCAGG CAGCACTGAA CCTCTGTGCG CTTCGGCTG GGAGAGTTTT TACCGTAACT ACATGTGGAA CCATCCTGAA  
GGAACATCTG GATGGGATGG GGTACAGGGA AGGGAGCTGC CAAGAGTGCT GCCCAGGGAC CTGGGTCTAT GAGCTGGTTG  
GGGGGTGGG TTGGGTGCAG GGTACTTGAT CCTGAGTGGG CTTCTGCGG CCAGGATTGG TTCTAGAGTA GGAGGGGTGG  
GATCGGGGAT GGGGGAAGCC TGTAATGCG CTGAGTTGT CAGGTCCAG GTTCTGGGTG ACCTACTAAG GATTCTGGGT  
CCAGTGTGG TCCAGGTTA GACGTCTAG TCCTGAGTCC GTGTCCACAG TTCTGGGTGT TGAGCTTAGG ACAGTGATCT  
GGAGTTGACA GTCCAATCTA GGTCTGAGTC CTGACCCCAA GTCTAGAGTT CAGGGTCATG GTAGTAGCCT AGGGTCAGAA  
TCAAGGTTGG GGTCAAGTA CAGGATGGGA TCGAGGTCAT GGTCCAAAT CTGGATCTGG GGACCTGTTG GGGGTCTGAG  
GTGAGTGTG CAGTCTGGGT ATGGCGTTGG AGACCCAGGG CTGTGATCTG AGGTATGCT TAGAGTCTCA GGTGGTGGG  
CAAGGTTTGA GTCTGGGGTC CTGTTGGAG TCTGGTGCA GGTGCTGGAC TCGTCCAAG GTCAGGGAGT CCGGGGTTAT  
AGCCAGGGTC TGAGATGAAA GTCCAGATG GTGTTGAGG GTCTGAATCT GTGTCTTGT GAGCGTCCAG GTTCCCTGTG  
ATCAGTTTG TGTGAGGGC TCGCGCCGA CTGGGAGCC GTGTCCAG AGATGTGACC CAGGTTGTG GTCACGAAT  
GGGTCTCGG TCGTCTCGT GCCGGTCCC TGTCGTGTT CAGGCCGGG TCTCCGTCCA GCATCGAGGG CCGAGGTCAC  
GGCCAGGGTC TGAGCCCGCG GTCGAGGTC TGGTTCGGG TCAGATTCCG CGCGGCTCC AGGGGGCGCC GTCGCGGCC  
GGCTCGGCC CTCGCGGGCT CGTGGCGTT GTGCGCGCA GCGGGGGCG GAGGCGCGG CCGCTCCGG GCGCGGGCC  
GGGCGGCGG GCGGCGGCG CCCCAGCTGC AGTCCCGCG GGAGCGGAGC GCGAAGCGG GGGCCGGGCC CGGAGCCGCG  
GCCATGGGG GCGCGCGCT GTGAGCGGCG GCGAGCGGAG CCGCGGGCG CGAGCAGGGC CAGGCGGGAG CGTCGGCGCC  
CGAGCCGAG CGAGCCGCG CCGGCGCGG CCGAGCGCG AGCGAGCAG AGCGCGCGG GCGCGCGCG  
CGGCGGAGG AGGCAGCGCC GCCGCAAGA TGGCGGAGT GGAGGCGGTG CTGGCCGACG TGAGCTACCT GATGGCCATG  
GAGAAGAGCA AGGCCACGCC GCGCGCGCG GCCAGCAAGA AGATACTGCT GCCCGAGCCC AGGTGAGGAG AAGCT-3'  
(FRAG. NO. ) (SEQ. ID NO:2429)

5'-GCCGCGCGG CCAAGATGGC GGACCTGGAG GCGGTGCTGG CCGACGTGAG CTACCTGATG GCCATGGAGA  
AGAGCAAGCG CACGCCGGCC GCGCGCGCA GCAAGAAGT ACTGCTGCC GAGCCAGCA TCCGAGTGT CATGCAGAAG  
TACCTGGAGG ACCGGGGCGA GGTGACCTT GAGAAGATCT TTCCAGAA GCTGGGGTAC CTGCTTCC GAGACTCTG  
CCTGAACCAC CTGGAGGAG CAGGCCCTT GGTGGAATTC TATGAGGAGA TCAAGAAGTA CGAGAAGCTG GAGACGGAGG  
AGGAGCGTGT GGCCCGCAGC CGGGAGATCT TCGACTCATA CATCATGAAG GAGCTGCTGG CTTGCTCGCA TCCCTTCTCG  
AAGAGTGCCA CTGAGCATGT CCAAGGCCAC CTGGGGAAGA AGCAGGTGCC TCCGATCTC TTCCAGCCAT ACATCGAAGA  
GATTTGTCAA AACCTCCGAG GGGACGTGT CCAGAAATTC ATTGAGAGCG ATAAGTTAC ACGGTTTTGC CAGTGGAAGA  
ATGTGGAGCT CAACATCCAC CTGACCATGA ATGACTTCAG CGTGATCGC ATCATTGGG GCGGGGGCTT TGGCAGGTC  
TATGGGTGCC GGAAGGCTGA CACAGGCAAG ATGTACGCCA TGAAGTGCCT GGACAAAAG CGCATCAAG TGAAGCAGGG  
GGAGACCTG GCCTGAACG AGCGCATCAT GCTCTGCTC GTGACACTG GGGACTGCC ATTCATTGTC TGCATGTCAT  
ACGCGTTCCA CAGCCAGAC AAGCTCAGCT TCATCTGGA CCTCATGAAC GGTGGGGACC TGCACTACCA CCTCTCCAG  
CACGGGTCT TCTCAGAGG TGACATGCG TTCTATGCG CCGAGATCAT CTTGGGCTG GAGCACATGC ACAACCGCTT  
CGTGTCTAC CGGGACCTGA AGCCAGCAA CATCTTCTG GACGAGCATG GCCACGTGC GATCTCGGAC CTGGGCTGG  
CCTGTGACTT TTCAAAGAAG AAGCCCCATG CCAGCGTGG CACCCAGGG TACATGGCTC CGAGGTCTC GCAGAAGGGC  
GTGGCTACG ACAGCAGTGC CAGTGGTTC TCTTGGGT GCATGCTCTT CAAGTTGCTG CCGGGGCACA CCCCCTCCG  
GCAGACAAG ACCAAAGACA AGCATGAGAT CGACCGCATG ACGTGACGA TGGCCGTGA GCTGCCGAC TCCTTCTCCC  
CTGAACACG CTCCCTGCTG GAGGGGTTG TGCAGAGGGA TGTAACCG AGATTGGGT GCTGGGCG AGGGGCTCAG  
GAGGTGAAAG AGAGCCCTT TTTCCGCTCC CTGGACTGG AGATGGTCTT CTGCGAGAAG TACCCTCCC CGTGATCCC  
CCCACGAGG GAGGTGAACG CCGCCGACG CTTCGACATT GGCTCCTCG ATGAGGAGGA CACAAAAGGA ATCAAGTTAC  
TGGACAGTGA TCAGGAGCTC TACCGCAACT TCCCCCTAC CATCTCGGAG CGGTGGCAG AGGAGGTGGC AGAGACTGTC  
TTCGACACCA TCAACGCTGA GACAGACCG CTGGAGGCTC GCAAGAAGC CAAGAACAAG CAGTGGGC ATGAGGAAGA  
CTACGCCCTG GGAAGGACT GCATCATGCA TGGTACATG TCCAAGATGG GCAACCCCTT CTGACCCAG TGGCAGCGG  
GGTACTTCA CTTGTTCCCC AACCGCTCG AGTGCGGGG CAGGGCGAG GCCCGCAGA GCCTGCTGAC CATGGAGGAG  
ATCCAGTCG TGGAGGAGAC GCAGATCAAG GAGCGCAAGT GCCTGCTCT CAAGATCCG GGTGGGAAAC AGTTCATTT  
GCAGTGGAT AGCGACCTG AGCTGGTGA GTGGAAGAAG GAGCTGCGG ACGCTACCG CAGGCCCCAG CAGCTGGTGC  
AGCGGGTCCC CAAGATGAAG AACAAGCCG GCTCGCCCGT GGTGAGCTG AGCAAGGTG CCGTGGTCCA GCGCGGCACT  
GCCAAGGCC TCTGACCCG CCACCCGCT-3' (FRAG. NO. ) (SEQ. ID NO:2428)

**CCR-2 CC Chemokine Receptor Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-CTTTGTGAAG AAGGAATTGG CAACACTGAA ACCTCCAGAA CAAAGGCTGT CACTAAGGTC CCCTGCCTT  
GATGGATTAT ACATTGACC TCAGTGTGAC AACAGTGAC GACTACTACT ACCTGATAT CTCTCAAGC CCCTGTGATG  
CGGAACITAT TCAGCAAAAT GCAAGTTGC TCCTTGCTGT CTTTATTGC CTCCTGTTG TATTAGTCT TCTGGGAAAC  
AGCTGGTCA TCCTGGTCT TGTGGTCTG AAGAAGCTGA GGAGCATCAC AGATGTATAC CTCTGAACC TGGCCCTGTC

TGACCTGCTT TTTGTCTTCT CCTTCCCTT TCAGACCTAC TATCTGCTGG ACCAGTGGGT GTTTGGGACT GTAATGTGCA  
AAGTGGTGTC TGGCTTTTAT TACATTGGCT TCTACAGCAG CATGTTTTTC ATCACCCTCA TGAGTGTGGA CAGGTACCTG  
GCTGTGTGCC ATGCCGTGTA TGCCTAAAAG GTGAGGACGA TCAGGATGGG CACAACGCTG TGCCTGGCAG TATGGCTAAC  
CGCCATTATG GCTACCATCC CATTGCTAGT GTTTTACCAA GTGGCCTCTG AAGATGGTGT TCTACAGTGT TATTCATTTT  
ACAATCAACA GACTTTGAAG TGGAAGATCT TCACCAACTT CAAAATGAAC ATTTTAGGCT TGTGTATCCC ATTCACCATC  
TTTATGTTCT GCTACATTAA AATCTGCAC CAGCTGAAGA GGTGTCAAAA CCACAACAAG ACCAAGGCCA TCAGGTGGT  
GCTCATTGTG GTCATTGCAT CTTTACTTTT CTGGGTCCCA TTCAACGTGG TCTTTTCT CACTTCTTG CACAGTATGC  
ACATCTTGA TGGATGTAGC ATAAGCCAAC AGCTGACTTA TGCCACCCAT GTCACAGAAA TCATTTCTT TACTACTGC  
TGTGTGAACC CTGTTATCTA TGCTTTTGT GGGGAGAAGT TCAAGAAACA CCTCTCAGAA ATATTTCAGA AAAGTTCAG  
CCAAATCTTC AACTACCTAG GAAGACAAAT GCCTAGGGAG AGCTGTGAAA AGTCATCATC CTGCCAGCAG CACTCCTCCC  
GTTCTCCAG CGTAGACTAC ATTTTGTGAG GATCAATGAA GACTAAATAT AAAAAACATT TTCTTGAATG GCATGCTAGT  
AGCAGTGAGC AAAGGTGGG GTGTGAAAGG TTTCAAAAAA AAGTTCAGCA TGAAGGATGC CGTGTGTGTT GTTGCCAACA  
CTTGAACAC AATGACTGGA GACATAGTTG TGCCTGCTG GCACAACATC AAGCCTGTGA TTGTGTTTAT TGATGATGTT  
GAACAAGTGG TGGCTTTGAG GGATTCTGTA TGCCAAGTGG AAAAAAAGA TGTCTCCGGA ATTCGACAGG TTATCA-3'  
(FRAG. NO. ) (SEQ. ID NO:2462)

**CCR-4 CC Chemokine Receptor Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-TTTCATCTCT CCGGGCTTAT TTGCTGGTTT CTCCGAATGC GGGCCTGTG TGGTTCACGC TGGATCCCCA ACGCCTAGAA  
CAGTGCCTGG CACGCAGTTC GTCTTCTAT AAATATCGGA CTAATATGCAT CTCTGTGATG GTAATACCCA CACGGTGTG  
TGAGAATGAA TGAGTATTC TGTGCAAGTT CCTAGTGATC TGTTACAAAA AGTACTGGTC GCTAAATTAC TCTTATAATA  
AAGCATACTT TTAGGATAAT AAAGCACTAT TCGGCAATTG GTTACCGCTA TTATGAAATT ACTGAGCAAT ACATATCTAC  
ATCTGATCAG TCTCCAGAAT TATGCCAAAT CCTACCTTCT TCTGAAAGTA TCTCCTAATT ATCTGCACCT GACCTAGTG  
ATGCTGTGAA TGTGCAAGTA TAGCTACATC CTCCGAAGGA AGGATCTTTA CTCCTTTTAC CTCCTGAATG GGTGCGTCT  
GCTGAAAGCG CGGGGGAATG GCGGTTGGA AGCTTGGCCC TACTTCCAGC ATTGCGCCT ACTGGTTGGG TTAATCCAGC  
AAGTCACTCC CTTTCCCTGG GCCTCAGTGT CTCTACTGTA GCATTCCAG GTCTGGAATT CCATCCACTT TAGCAAGGAT  
GGACGCGCCA CAGAGAGACG CGTTCCTAGC CCGCGCTTCC CACTGTCTT CAGGCGCATC CCGTTCCTT CAAACTTAGG  
AAATGCCCTT GGGAGGTCTT GTCCGGCTCC GGACTACTA CCGACACCC GCAAACAGCA GGGTCCCTG GGCTTCCCAA  
GCCGCGCACC TCTCCGCCCC GCCCTGCGC CTCCTTCTT CGCGTCTGCC CTTCTCCCCC ACCCGCCTT CTCCTCCCC  
GCCCAGCGG CGCATGCGCC GCGCTCGGAG CGTGTTTTAA TAAAGTCCG GCCGCGCCA GAAACTTCAG TTTGTTGGCT  
GCGGCAGCAG GTAGCAAAGT GACGCCGAGG GCCTGAGTGC TCCAGTAGCC ACCGCATCTG GAGAACCAGC GGTACCAGT  
GAGGGGATCA GTGTAAGTCC AGTTTCAACC TGCTTTGTCA TAAATGTACA AAGCTTTGAA CTTAGAGCGC AGCCCTCTC  
CGAGCGGGA GAAGCGGCCA GGACATTGGA GGTACCCGTA CTCCAAAAA GGGTACCAG AAGGAGTTT CTTGACCATG  
CCTATATAGT CGGGTGGGT GGGGGGGGAG CAGGATTGGA ATCTTTTCT CTGTGAGTCG AGGAGAAACG ACTGGAAGA  
GCGTTCAGT GGCTGCATGT GTCTCCCCCT TGAGTCCGC CGCGCGCGC GGCTTGACG CTGTTTGCAA ACGTAAGAAC  
ATTCTGTGCA CAAGTGCAGA GAAGGCGTGC GCGCTGCTC GGGACTCAGA CCACCGTCT CTTCTTGGG GAAGCGGGGA  
TGCTTTGGAG CGAGTTACAT TGTCTGAATT TAGAGGCGGA GGGCGGCTG CTTCCAGGA GGAGATTGCG  
CCCGCTTAA CTTCCGGGTT AAGCGCCTGG TGACTGTTCT TGACACTGGG TCGTGTGTTG TTAACCTCTG TCGCGCCGAC  
GGAGCTGTGC CAGTCTCCA GCACAGTAGG CAGAGGGCGG GAGAGGGCGG TGGACCCACC GCGCCGATCC TCTGAGGGGA  
TCGAGTGGT GCAGCAGCTA GGAGTTGATC GCCCGCGCG CTTTGGGTT GAGGGGAAA CTTCCCGG GTCCGAAGCG  
CGCCTCTTCC CCACGGCCGC GAGTGGGTCC TGCACTTGA GAGTTTGGG TCGTGCAGG GTCAGCGGAG TCGTTTGACC  
TCCCTTTGA CACCGCGCAG CTGCCAGCCC TGAGATTGTC GTCGCGGGA TAGGAGCGG TACGGGGTGA GGGCGGGGG  
CGGTAAAGAC CGACCTGGG CTGCCAGGTC GCCCGCGGA AGACTGGCAG GTGCAAGTGG GGAACCGTT TGGCTCTCTC  
CGAGTCCAGT TGTGATGTTT AACCGTCCGT GGTTCACAGA AACCTTTTGA AACCTCTT CTAGGGAGTT TTTGGTTTCC  
TGCAGCGCGC CGCAATTCAA AGACGCTCGC GCGGAGCGC CCCAGTCTG CCCAGCACC CTGTGGGACA GAGCCTGGCG  
TGTCGCCAG CGGAGCCCT GCAGCGCTG TTGCGGCGG TTGCGTGGG TGTAGTGGG AGCCGCGCG GCGCGGGCT  
GGACGACCCG GCGCCCGCG TGCCACCGC CTGGAGGCTT CCAGTGCCT ACCTCCGCG ACCTTCACTG CATCATGGC  
GGGGTAATGG GAAGCCACCC GGGAGAGTGA GGAATGAAA CTTGGGGCGA GGACCACGGG TGCAGACCCC GTTACTTCT  
CCACCCAGGA AAATGCCCCG CTCCTAACG TCCAAACGC GCCAAGTAT AAACACGAGG ATGGCAAGAG ACCACACAC  
CGGAGGAGCG CCCGTTGGG GGAGGAGGTG CCGTTTGTTC ATTTTCTGAC ACTCCCGCC AATATACCC AAGCACCGAA  
GGGCTTCTG TTTAAGACCG CATTCTCTT ACCCACTACA AGTTGCTTGA AGCCAGAAT GGTGTGATT TAGGCAGGCG  
TGGGAAAAT AAGTTTGTG GCTTTAGGAG AATGAGTCT TGCAACGCCC CCGCCCTCC CCGCTGATCC TCCCTTCTC  
CCTCTTCCCT CCTGGGCGA AAAACTTCTT ACAAAAAGTT AATCACTGCC CTCTCAGCA GCACCCACCC CACCTTCTC  
GCCGCTGGG AGTGGCTCT TGTGTGTAT TTTTTTTT CTCCTAAGGA AGGTTTTTT TCTTCCCTCT AGTGGCGGG  
GCAGAGGAGT TAGCCAAGAT GTGACTTGA AACCTCAGC GTCTCAGTGC CTTTGTGTC TAAACAAAGA ATTTTGAAT  
TGGTTCTACC AAAGAAGGAT ATAATGAAGT CACTATGGGA AAAGATGGG AGGAGAGTTG TAGGATTCTA CATTAATTCT  
CTTGTGCCCT TAGCCACTA CTTGAGAATT TCCTGAAGAA AGCAAGCCTG AATTGGTTT TAAATTGTCT TAAAAATTT  
TTTTTAATG TGTTAATGCT TGCTGAATTG GAAGTGAATG TCCATTCTT TGCTCTTT GCAGATATAC ACTTCAGATA  
ACTACACCGA GGAATGGGG TCAGGGGACT ATGACTCCAT GAAGGAACCC TGTTCCGCT AAGAAAATGC TAATTTCAAT  
AAAATCTTCC TGCCACCAT CTAATCCATC ATCTTCTTAA CTGGCATTGT GGGCAATGGA TTGGTCATCC TGGTCATGG  
TTACCAGAAG AAAGTGAAG GCATGACGGA CAAGTACAGG CTGCACCTGT CAGTGGCGA CCTCTCTT GTCATCACG  
TTCCCTCTG GGCAGTTGAT GCCGTGGCAA ACTGGTACTT TGGGAACCTC CTATGCAAGG CAGTCCATGT CATCTACAC  
GTCAACCTCT ACAGCAGTGT CCTATCCTG GCCTTCATCA GTCTGGACCG CTACCTGGCC ATCGTCCAG CCACCAACAG  
TCAGAGGCCA AGGAAGCTGT TGGCTGAAAA GGTGGTCTAT GTTGGCGTCT GGATCCCTGC CCTCTGCTG ACTATTCCCG  
ACTTCACTCT TGCCAACGTC AGTGAGGCA ATGACAGATA TATCTGTGAC CGCTTCTACC CCAATGACTT GTGGTGGT  
GTGTTCCAGT TTCAGCACAT CATGGTTGGC CTATCCTGC CTGGTATTGT CATCTGTC TCGTATTGCA TTATCATCTC  
CAAGCTGTCA CACTCCAAGG GCCACAGAA GCGCAAGGCC CTCAAGACCA CAGTCATCCT CATCTGGCT TCTTCGCT  
GTTGGCTGCC TTAATACATT GGGATCAGCA TCGACTCCT CATCTCTG GAAATCATCA AGCAAGGGTG TGAGTTGAG  
AACACTGTG ACAAGTGGAT TTCCATCACC GAGGCCCTAG CTTTCTTCCA CTGTGTCTG AACCCATCC TCTATGCTT  
CCTTGGAGCC AAATTTAAAA CCTCTGCCA GCACGCACT ACCTCTGTGA GCAGAGGGT CAGCCTCAAG ATCCTCTCA  
AAGGAAAGCG AGGTGGACAT TCATCTGTTT CCACTGAGTC TGAGTCTTCA AGTTTCACT CCAGCTAACA CAGATGAAA

AGACITTTTT TTATACGATA AATAACTTTT TTTTAAGTTA CACATTTTTC AGATATAAAA GACTGACCAA TATTGTACAG  
TTTTATTGC TTGTGGATT TTGTCTGT GTTCTTTAG TTTTGTGAA GTTAATTGA CTATTATATA TAAATTTTT  
TTGTTTCATA TTGATGTGT TCTAGGCAGG ACCTGTGGCC AAGTCTTAG TTGCTGTATG TCTCGTGGTA GGACTGTAGA  
AAAGGGAAC GAACATTCCA GAGCGTGTAG TGAATCACGT AAAGCTAGAA ATGATCCCCA GCTGTTTATG CATAGATAAT  
CTCTCCATTC CCGTGAACG TTTTCTCTGT TCTTAAGACG TGATTTTGT GTAGAAGATG GCACTTATAA CCAAAGCCCA  
AAGTGGTATA GAAATGCTGG TTTTTCAGTT TTCAGGAGTG GGTGATTTC AGCACCTACA GTGTACAGTC TTGTATTAAG  
TTGTTAATAA AAGTACATGT TAACTTACT TAGTGTATG TTCTGATTTC TGTGACATT CTTTGGCTA GTAGAAGACA  
AAAGTAATAC ATTTATGGTA TGCAAAGCAC TATCTAGGT ATTTCATTGT AATATTTTAC TTACCCTTA TCACAATCT  
GATAGATTCT GCTTCTGTTA CTAATTACAT TTTATAGAAG AGGAAACGGA GGCACAGAAA GCCTAAGTAA CTTGTTAAA  
GGCATGTAGT AAGTATCAAA TCTGTATTT TAAACCAGGT AACATGACTT AACGAATCTG AAGCCTTAC CACTTTAAAT  
TCAAATGGAA GTTTAGAAAT GGCCAGCCAG CACCTATTG TATGAAAGGT CATCTTTCAG AGGATAAGCA TGTATAAAGA  
AGAAAAGGTA TGCAGTCGTG TTTGGATTTT ACTCCACCAT C-3' (FRAG. NO: ) (SEQ. ID NO: 2463)

**CD-34 Nucleic Acids and Antisense Oligonucleotide Fragments**

5'-AGGATGATGG TGATGGGGAA CTAATGGGG AAATATGGAA GGTACAGGA AAAGTTAACA CAAGTTAGCA  
AAAGTTAAC ATAACACAAA AAGGTCTTGC AGGAAAAAAA AAAGAAAAGA AAAGAAAGAA AAAGTCTCCA AGAATGGTTT  
GGACAGCCAA AATGAATACT TATAGTCACG TATACCTGCT CACTCTGAC GCTTCACTCA CACACAGCAC AGGATCTGGT  
GAGGCTATCA TAAATGTGC CACATTGTGG TTAAGTTTAA CTGATTAAC GAAATGCTCA CACTTCTAAA CTGAGGTCTT  
TACAGTAGAT TCCTTTTGCA AGATTGTTAC TGGCTTACAA CTAAAAATA AAGGAAAATC ACAAGGAAAG AAAAGTGGGG  
AAAAAATCGG GGGAAACTTG CCCCTGCCCT GGCCACCGG AAGGTGCCA CAAAGGGGTT AAAAGTTAAG TGGAAAGTGA  
GCTTGAAGAA GTGGGATGGG GCCTCTCCAG GAAAGCTGAA CGAGGCTCTT GGAGCCCGAA CAAACCTCCA CTTGTTTGG  
CCTCGACGGC GGCAACCCAG CCTCCCTCT AAGCCCTCC GCCTTTGGGA CCAACCAGGG GAGCTCAAGT TAGTAGCAGC  
CAAGGAGAGG CGCTGCCTTG CCAAGACTAA AAAGGGAGGG GAGAAGAGAG GAAAAAGCA AGAATCCCCC ACCCTCTCC  
CGGGCGGAGG GGGCGGGAAG AGCGCGTCTT GGCCAGGCC AGTAGTGTCT TCCACTCGGT GCGTCTCTCT AGGAGCCGCG  
CGGGAAGGAT GCTGGTCCG AGGGGCGCGC GCGCAGGGCC CAGGATGCCG CGGGGCTTGA CCGCGCTTGT CTTGCTGAGT  
TTGCTGC CTTTTTTGG CCTCGACGGC GGCAACCCAG CCTCCCTCT AAGCCCTCC GCCTTTGGGA CCAACCAGGG  
GAGCTCAAGT TAGTAGCAGC CAAGGAGAGG CGCTGCCTTG CCAAGACTAA AAAGGGAGGG GAGAAGAGAG  
GAAAAAGCA AGAATCCCCC ACCCTCTCC CGGGCGGAGG GGGCGGGAAG AGCGCGTCTT GGCCAAGCCG AGTAGTGTCT  
TCCACTCGGT GCGTCTCTCT AGGAGCCGCG CGGGAAGGAT CTGTGTCGC AGGGGCGCGC GCGAGGCTCT GCGCAAGCCG AGTAGTGTCT  
GGGGTGGAC CGCGCTTTC TTGCTGAGTT TGCTGCCTTC TGGGTTTCATG AGTCTTGACA ACAACGGTAC TGCTACCCCA  
GAGTTACCTA CCCAGGGAAC ATTTTCAAAAT GTTTCTACAA ATGTATCCTA CCAAGAACT ACAACACCTA GTACCCTTGG  
AAGTACCAGC CTGCACCCTG TGTCTCAACA TGGCAATGAG GCCACAACAA ACATCACAGA AACGACAGTC AAATTCACAT  
CTACCTCTGT GATAACCTCA GTTTATGGAA ACACAACCTC TTCTGTCCAG TCACAGACCT CTGTAATCAG CACAGTGTTC  
ACCACCCAG CCAACGTTTC AACTCCAGAG ACAACCTTGA AGCCTAGCCT GTCACCTGGA AATGTTTTCAG ACTTTTCAAC  
CACTAGCACT AGCCTTGCAA CATCTCCAC TAAACCTAT ACATCATCTT CTCCTATCCT AAGTGACATC AAGGCAGAAA  
CTAAATGTTT AGGCATCAGA GAAGTGAAT: TGACTCAGG CATCTGCCTG GAGCAAAATA AGACCTCCAG CTGTGCGGAG  
TTAAGAAGG ACAGGGGAGA GGGCCTGGCC CGAGTCTGT GTGGGAGGA GCAGGTGAT GCTGATGCT GGGCCAGGT  
ATGCTCCCTG CTCCTTGGCC AGTCTGAGGT GAGGCCTCAG TGTCTACTGC TGGTCTTGGC CAACAGAAC GAAATTTTCA  
GCAAACTCCA ACTTATGAAA AAGCACCAAT CTGACCTGAA AAAGTGGGG ATCCTAGATT TCACTGAGCA AGATGTTGCA  
AGCCACCAGA GCTATTCCCA AAAGACCCTG ATTGCACTGG TCACCTCGGG AGCCCTGCTG GCTGTCTTGG GCATCACTGG  
CTATTCTCTG ATGAATGCC GCAGCTGGAG CCCACAGGA GAAAGGCTGG GCGAAGACCC TTATTACACG GAAACCGGT  
GAGGCCAGGG CTATAGCTCA GGACCTGGGA CCTCCCTCA GGCTCAGGGA AAGGCCAGTG TGAACCGAGG GGCTCAGAAA  
AACGGGACCG GCCAGGCCAC CTCCAGAAAC GGCAATTCAG CAAGACAACA CGTGGTGGCT GATACCGAAT TGTGACTCGG  
CTAGGTGGGG CAAGGCTGGG CAGTGTCCGA GAGAGCACCC CTCTCTGCAT CTGACCACGT GCTACCCCA TGCTGGAGGT  
GACATCTCT ACGCCCAACC CTCCCTCACT GCACACCTT CAGAGGCTGT TCTTGGGGCC CTACACCTTG AGGAGGGGGC  
AGGTAAACTC CTGTCTTTA CACATTCGGC TCCTCTGAGC CAGACTCTGG TCTTCTTGG GTAAACGTTG GACGGGGGAA  
AGCCAAGGTC TGGAGAAGCT CCCAGGAACA ATCGATGGCC TTGCAGCACT CACACAGGAC CCCCTTCCCC TACCCCTCC  
TCTCTGCCG AATACAGGAA CCCCAGGGG AAAGATGAGC TTTTCTAGGC TACAATTTT TCCCAGGAAG CTTGATTTT  
TACCGTTTCT TCCTGTATT TTCTTTCTT ACTTTGAGGA AACCAAAGTA ACCTTTTGCA CTTGCTCTCT TGTAATGATA  
TAGCCAGAAA AACGTGTTGC CTGGAACCAC TTCCCTCATC TCTCTCAA GACACTGTGG ACTTGGTCTAC CACTGCTCC  
CTTGTCTCT AAGTCCACT GAGCTCCATG TGCCCCCTT ACCATTGCA GAGTCTGCA CAGTTTCTG GCTGGAGCCT  
AGAACAGGCC TCCCAAGTTT TAGGACAAAC AGCTCAGTTC TAGTCTCTT GGGGCCACAC AGAACTCTT TTTGGGCTCC  
TTTTCTCC TCTGATCAA AGTAGGCAG ACCATGGGAC CAGGTCTTGG AGCTGAGCCT CTCACCTGTA CTCTCCGAA  
AAATCCTCTT CTCTGAGGC TGGATCCTAG CCTATCCCT CAGTCTCCAT GGCTCTCTG TCCCTCTGC CGACTCTGG  
GTTGAGCTGT TGCTCAGTC CCCAACAGA TGCTTTTCTG TCTGTGCTC CTCAACCCTG AGCCCTTCC TTGCTCTGCA  
CCCCATATG GTCATAGCCC AGATCAGCTC TAAACCTTA TCACCAGCTG CCTTCTGT GGGTGACCA GGTCTTGT  
TGCTGTTGAT TTCTTCCAG AGGGGTTGAG CAGGGATCCT GGTTCATG ACGGTTGGAA ATAGAAATTT CCAGAGAAGA  
GAGTATTGG TAGATATTTT TTCTGAATAC AAAGTGATGT GTTAAATAC TGCAATTAAG GTGATACTGA AACAC-3'  
(FRAG. No: ) (SEQ. ID NO: 2466)

5'-AGGATGATGG TGATGGGGAA CTAATGGGG AAATATGGAA GGTACAGGA AAAGTTAACA CAAGTTAGCA  
AAAGTTAAC ATAACACAAA AAGGTCTTGC AGGAAAAAAA AAAGAAAAGA AAAGAAAGAA AAAGTCTCCA  
AGAATGGTTT GGACAGCCAA AATGAATACT TATAGTCACG TATACCTGCT CACTCTGAC GCTTCACTCA CACACAGCAC  
AGGATCTGGT GAGGCTATCA CTAATGTGC CACATTGTGG TTAAGTTTAA CTGATTAAC GAAATGCTCA CACTTCTAAA  
CTGAGGTCTT TACAGTAGAT TCCTTTTGCA AGATTGTTAC TGGCTTACAA CTAAAAATA AAGGAAAATC ACAAGGAAAG  
AAAAGTGGGG AAAAAATCGG AGGAAACTTG CCCCTGCCCT GGCCACCGG AAGGTGCCA CAAAGGGGTT AAAAGTTAAG  
TGGAAAGTGA GCTTGAAGAA GTGGGATGGG GCCTCTCCAG GAAAGCTGAA CGAGGCTCTT GGAGCCCGAA CAAACCTCCA  
CCTTTTTTGG CCTCGACGGC GGCAACCCAG CCTCCCTCT AAGCCCTCC GCCTTTGGGA CCAACCAGGG GAGCTCAAGT  
TAGTAGCAGC CAAGGAGAGG CGCTGCCTTG CCAAGACTAA AAAGGGAGGG GAGAAGAGAG GAAAAAGCA  
AGAATCCCCC ACCCTCTCC CGGGCGGAGG GGGCGGGAAG AGCGCGTCTT GGCCAAGCCG AGTAGTGTCT TCCACTCGGT  
GCGTCTCTCT AGGAGCCGCG CGGGAAGGAT GCTGGTCCG AGGGGCGCGC GCGCAGGGCC CAGGATGCCG CGGGGCTGGA  
CGCGCTTGT CTTGCTGAGT TTGCTGC-3' (FRAG. NO: ) (SEQ. ID NO: 2464)

5'-CTTTTTTGG CCTCGACGGC GGCAACCCAG CCTCCCTCT AAGCCCTCC GCCTTTGGGA CCAACCAGGG GAGCTCAAGT  
TAGTAGCAGC CAAGGAGAGG CGCTGCCTTG CCAAGACTAA AAAGGGAGGG GAGAAGAGAG GAAAAAGCA  
AGAATCCCCC ACCCTCTCC CGGGCGGAGG GGGCGGGAAG AGCGCGTCTT GGCCAAGCCG AGTAGTGTCT TCCACTCGGT



CGGTCTCTCT AGGAGCCGCG CGGGAAGGAT GCTGGTCCGC AGGGGCGCGC GCGAGGGCCC AGGATGCCGC GGGGCTGGAC  
 CGCGCTTTGC TTGCTGAGTT TGCTGCCTTC TGGGTTTCATG AGTCTTGACA ACAACGGTAC TGCTACCCCA GAGTTACCTA  
 CCCAGGGAAC ATTTTCAAAAT GTTCTACAA ATGTATCCTA CCAAGAACT ACAACACCTA GTACCCTTGG AAGTACCAGC  
 CTGCACCTGT TGTCTCAACA TGGCAATGAG GCCACAACAA ACATCACAGA AACGACAGTC AAATTCACA CTACCTCTGT  
 GATAACCTCA GTTATGGAA ACACAACTC TTCTGTCCAG TCACAGACCT CTGTAATCAG CACAGTGTTC ACCACCCAG  
 CCAACGTTTC AACTCCAGAG ACAACCTGA AGCCTAGCCT GTCACCTGGA AATGTTTCAG ACCTTTCAAC CACTAGCACT  
 AGCCTTGCAA CATCTCCAC TAAACCTAT ACATCATCTT CTCTATCTT AAGTGACATC AAGGCAGAAA TCAATGTTC  
 AGGCATCAGA GAAGTGAAT TGACTCAGGG CATCTGCCTG GAGCAAAATA AGACCTCCAG CTGTGCGGAG TTTAAGAAGG  
 ACAGGGGAGA GGGCCTGGCC CGAGTGCTGT GTGGGGAGGA GCAGGCTGAT GCTGATGCTG GGGCCAGGT ATGCTCCCTG  
 CTCCTTGCCC AGTCTGAGGT GAGGCTCAG TGTCTACTGC TGGTCTTGGC CAACAGAAC GAAATTTCCA GCAAACCTCA  
 ACTTATGAAA AAGCACCAT CTGACCTGAA AAAGCTGGGG ATCCTAGATT TCACTGAGCA AGATGTTGCA AGCCACCAGA  
 GCTATTCCCA AAAGACCTG ATTGCACTGG TACCTCGGG AGCCCTGCTG GCTGTCTTGG GCATCACTGG CTATTTCTGT  
 ATGAATCGCC GCAGCTGGAG CCCACAGGA GAAAGGCTGG GCGAAGACCC TTATTACAG GAAAACGGTG GAGGCCAGGG  
 CTATAGCTCA GGACCTGGGA CCTCCCTGA GGCTCAGGA AAGGCCAGTG TGAACCGAGG GGCTCAGAAA AACGGACCG  
 GCCAGGCCAC CTCAGAAAC GGCCATTAG CAAGACAACA CGTGGTGGCT GATACCGAAT TGTGACTCGG CTAGGTGGGG  
 CAAGGCTGGG CAGTGTCCGA GAGAGCACC CTCTCTGCAT CTGACCACGT GCTACCCCA TGCTGGAGGT GACATCTCT  
 ACGCCCAACC CTTCCTCACT GCACACACCT CAGAGGCTGT TCTTGGGGCC CTACACCTTG AGGAGGGGGC AGGTAACCTC  
 CTGTCTTTA CACATTCGGC TCCCTGGAGC CAGACTCTGG TCTTCTTGG GTAAACGTGT GACGGGGGAA AGCCAAGGTC  
 TGGAGAAGCT CCCAGGAACA ATCGATGGCC TTGCAGCACT CACACAGGAC CCCCTTCCC TACCCCTCC TCTCTGCCG  
 AATACAGGAA CCCCAGGGG AAAGATGAGC TTTTCTAGGC TACAATTTT TCCAGGAAG CTITGATTTT TACCGTTTCT  
 TCCCTGTATT TTCTTCTCT ACTTTGAGGA AACCAAAGTA ACCTTTTGCA CTGCTCTCT TGTAATGATA TAGCCAGAAA  
 AACGTGTTC CTGAACCAC TTCCCTCATC TCTCTCCAA GACACTGTGG ACTTGGTCAC CAGCTCCTCC CTGTCTCT  
 AAGTCCACT GAGTCCATG TGCCCCCTCT ACCATTGCA GAGTCTGCA CAGTTTTCTG GCTGGAGCCT AGAACAGGCC  
 TCCCAAGTTT TAGGACAAA AGCTCAGTTC TAGTCTCTT GGGGCCACAC AGAACTCTT TTTGGGCTCC TTTTCTCCC  
 TCTGGATCAA AGTAGGCAGG ACCATGGGAC CAGTCTTGG AGCTGAGCCT CTCACCTGTA CTCTCCGAA AAATCCTCTT  
 CCTCTGAGGC TGGATCCTAG CTTATCCTC TGATCTCCAT GGCTCTCTCC TCCCTCTGC CGACTCTGG GTTGAGTGT  
 TGCTCAGTC CCCAACAGA TGCTTTCTG TCTCTGCTC CCTCACCTG AGCCCTTCC TTGCTCTGCA CCCCCATATG  
 GTCATAGCCC AGATCAGTC TAAACCTTA TCACCAGCTG CCTCTCTGT GGGTGACCA GGTCTTGTG TTGCTGTGAT  
 TTCTTCCAG AGGGGTTGAG CAGGGATCCT GGTTCATG ACGGTGGAA ATAGAAATTT CCAGAGAAGA GAGTATTGGG  
 TAGATATTTT TTCTGAATAC AAAGTGATGT GTTAAATAC TGCAATTAAT GTGATACTGA AACAC-3' (FRAG. No. ) (SEQ. ID  
 NO:2465)

#### Eotaxin Antisense Nucleic Acids and Oligonucleotide Fragments

5'-GCATTTTTC AAGTTTATG ATTTATTTAA CTGTGGAAC AAAAATAAAC CAGAAACCAC CACCTCTCAC GCCAAAGCTC  
 ACACCTTCAG CCTCAACAT GAAGGTCTCC GCAGCACTTC TGTGGTGTCT GTCATAGCA GCTGCCTTCA GCCCCAGGG  
 GCTCGTGGG CCAGCTTCTG TCCCAACCAC CTGCTGCTTT AACCTGGCCA ATAGGAAGAT ACCCTTCAG CGACTAGAGA  
 GCTACAGGAG AATCACCAGT GGCAATGTC CCCAGAAAGC TGTGATCTTC AAGACCAAAC TGGCCAAAGGA TATCTGTGCC  
 GACCCCAAGA AGAAGTGGGT GCAGGATTCC ATGAAGTATC TGGACAAAA ATCTCCAAT CCAAAGCCAT AAATAATCAC  
 CATTTTGA ACCAAACCAG AGCCTGAGTG TTGCCTAAT TGTCTTCCCT TCTTACAATG CATCTGAGG TAACCTCAT  
 ATCAGTCCAA AGGGCATGGG TTTTATTATA TATATATATA TTTTTTTT AAAAAAAA GTATTGCATT TAATTTATTG  
 AGGCTTTAAA ACTTATCTC CATGAATATC AGTTATTTT AAATGTAAA GCTTGTGCA GATTCTTTAC CCCCTGGAG  
 CCAAATTCG ATCCCTGTC ACGTGTGGC AATGTTCCC CTCTCTCTC TTCTCCCTG GAATCTGTGA AAGGTCTGG  
 CAAAGATGAT CAGTATGAAA ATGTCATTGT TCTGTGAAC CCAAAGTGTG ACTCATTAAT TGAAGTAAA TGTGTTTTA  
 GGAATAC ATGAAGTCT CCGCAGCACT TCTGTGGTG CTGCTCATAG CAGCTGCCT CAGCCCCAG GGGCTCGCTG  
 GGCCAGCTTC TGCCCAACC ACCTGCTGT TAACTGGC CATAAGGAAG ATACCCCTTC AGCGACTAGA GAGCTACAGG  
 AGAATCACC GTGGCAAATG TCCCAAGAAA GCTGTGATCT TCAAGACCA ACTGGCCAAG GATATCTGTG CCGACCCCA  
 GAAGAAGTGG GTGCAGGATT CCATGAAGTA TCTGGACCA AAATCTCCA CTCAAAGCC ATAA CACATATT  
 CCTCTTTT CCAAGGCAAG ATCCAGATGG ATTAATAAAT GTACCAAGTC CCTCTACTA GCTTGCCTCT CTCTGTCT  
 GCTTGACTTC CTAGGATCTG GAATCTGGTC AGCAATCAGG AATCCCTTCA TCGTGACCC CGCATGGGCA AAGGCTTCCC  
 TGAATCTCC CACACTGTCT GCTCCCTATA AAAGGCAGG AGATGGGCA GAGGAGCAGA GAGGCTGAGA CCAACCAGA  
 AACCACCACC TCTACGCCA AAGTCAAC CTTCAGCTC CAATCAAGG GTCTCCGCAG CACTTCTGTG GCTGCTGCTC  
 ATAGCAGCTG CCTTCAGCCC CCAGGGGCTC GCTGGGCCAG GTAAGCCCC CAACTCTTA CAGGAAAGT AAGGTAACCA  
 CCTCCAGCT ACTAGGTCAG CAAGAATCTT TACAGACTCA CTGCAAAATC TCCATTTGAA AAATAGGGAA ACAGGTTTTG  
 TGGGTGGACA AGAAATGCCT CAACCGTCAC ATCCAGTCAC TGGAAGAGCC AGAACTAGAA AGCTCCCGAG TCTTTTCCC  
 ACATTCAAGA GGGCCGCTGG GTGCATCCTT ACCCAGCTAT CCTTACAGTG TTTGGGAATG GGGAAATGGCT CTGTCTTACT  
 GTGGGCATGG TGGCATTTT TGGCAGTGG AGAGAAGGAA AATCTGTTGA TTAGAAGCTC AGTATGTTAA TTCGACTCCA  
 GGACAGCTT CAGAGACAGT GGCTAAGAGA AGAACGGAT CCCAGGGGAT CTCTGAGGT GACTTATTT GACACTCTT  
 GGGAAAGTTA TCTAGGAGAT TTGTCCATA ACTCATTTT CCATCTCTG GTGACAAAT TACTAGTGT ATCGGTCCCA  
 CTGAGCCAGT GCATAGCATG GTAACAAACA GTTCTAAAT ATCAATGACT TAACAGAATT AACTAAATTA ACAAAGTTA  
 CTTTCTCACT TGTACTAAAT ATCTATAATG TATGGGCTCA GGCTCTGCA TTTTATACT AGGATTCTAG ACTGATGGAG  
 AAGTTGCCAT GTGGGGGAAC ATTGATGGAT ACTGTGATA AGCAGAAGAA AGCTCTCAGG AGTCTTGCAT AGGCAATGCA  
 CTGTGGCTCA AAAATGACAC CCATCACTT GTCTCCTTCT TTATTGATCA AAATAATTA ATGCTTCCA CCAACAAAA  
 GTGGCCAAGA AATGCAAGTC TACCTGTGT CTCAAAACAG AGGATGGAGA ATATTGGTG AAAATTACCA TGACCATCAC  
 ATGGCCACGT AGGTCTTTAT AATGACAGAG CAGCAATTTG TCACATTGAC CAAGCTTTGT CCATACACTC TACAGTAATG  
 ATGAGTCTC AGTGACAGG GGAGGATGCT GAAGACACAG GACAGCATCC TCCAGACACA TAAGACTTCA GAGCAGGGG  
 ATTCTCCCT CACCTCTGC AATTCCTTGC TTTCTCTAA CTCTCTTAC AAAGTCATGC TTGGAAATGT CTATGTATCA  
 TCATGTGGCT CATTTTTTCT TCTGTTCAAT TTTTTCCTT AAAATTCAGC TTCTGTCCA ACCACCTGCT GCTTAACT  
 GGCCAATAGG AAGATACCCC TTCAGCGACT AGAGAGCTAC AGGAGAATCA CAGTGGCAA ATGTCCCGAG AAAGCTGTGA  
 GTAAAGTAAA TAAGTTTAC CCTCCCTAG AAAAAAAT AATGTCTAGG GCACAGAGTC AAGAATGTG GGAGTCATAG  
 ACTCTGATAG TTTGACCTCT ATGGTCCAAT TCATTAATTT TCACAAGTGA GTGTTCACTC CCAGCTCCCT GCCTGGGAGA

TTGCTGTAGT CATATCAATT TCTTCAAGTC AAGAGCAAAG ATGGTTTTAC TGGGCTTTA AGAGCAGCAA CTAACCCAAG  
AGTCTCATCC TTCCTCTCT CCGTAGCAAC CCTTTGTCCA GGGGCAGATG GTCCTTAAAT ATTTAGGGTC AAATGGGCAG  
AATTTTCAAA AACAATCCTT CCAATTGCAT CCTGATTCTC CCCACAGCTT CAAGACCAAA CTGGCCAAGG ATATCTGTGC  
CGACCCCAAG AAGAAGTGGG TGCAGGATTC CATGAAGTAT CTGGACCAAA AATCTCCAAC TCCAAAGCCA TAAATAATCA  
CCATTTTGA AACCAACCA GAGCCTGAGT GTTGCTAAT TTGTTTTCCC TTCTTACAAT GCATTCTGAG GTAACCTCAT  
TATCAGTCCA AAGGGCATGG GTTTTATTAT ATATATATAT ATATATTTTT TTTTAAAAAA AAACGTATTG CATTTAATTT  
ATTGAGGCTT TAAAACTTAT CCTCCATGAA TATCAGTTAT TTTTAAACTG TAAAGCTTTG TGCAGATTCT TTACCCCTG  
GGAGCCCCAA TTCATCCCC TGTCACGTGT GGGCAATGTT CCCCTCTCC TCTCTCTC CTGGCAAGG TATCTGTGAG  
CTGGCAAAGA TGATCAGTAT GAAAATGTCA TTGTTCTGT GAACCCAAAG TGTGACTCAT TAAATGGAAG TAATGTTGTT  
TTAGGAATAC ATAAAGTATG TGCATATTTT ATTATAGTCA CTAGTTGTAA TTTTTTTGTG GGAATCCAC ACTGAGCTGA  
GGGG-3- (FRAG. NO: ) (SEQ. ID NO:2494)

5'-GCATTTTTTC AAGTTTTATG ATTTATTTAA CTGTGGAAC AAAAAATAAC CAGAAACCAC CACCTCTCAC GCCAAAGCTC  
ACACCTTCAG CCTCCAACAT GAAGGTCTCC GCAGCACTTC TGTGGCTGCT GCTCATAGCA GCTGCCTTCA GCCCCAGGG  
GCTCGCTGGG CCAGCTTCTG TCCCAACCAC CTGCTGCTT AACCTGGCCA ATAGGAAGAT ACCCTTCAG CGACTAGGCA  
GCTACAGGAG AATCACCAGT GGCAATGTC CCCAGAAAGC TGTGATCTT AAGACCAAACT TGGCCAAGGA TATCTGTGAG  
GACCCCAAGA AGAAGTGGGT GCAGGATTCC ATGAAGTATC TGGACCAAAA ATCTCCAAT CCAAAGCCAT AAATAATCAC  
CATTTTTGAA ACCAAACCAG AGCCTGAGTG TTGCCTAAT TGTTCCTT TCTTACAATG CATTCTGAGG TAACCTCATT  
ATCAGTCCAA AGGGCATGGG TTTTATTATA TATATATATA TTTTTTTTTT AAAAAAAAAC GTATTGCATT TAATTTATTG  
AGGCTTTAAA ACTTATCTC CATGAATATC AGTTATTTTT AAACGTGAAA GCTTTGTGCA GATTCTTTAC CCCCTGGGAG  
CCCCAATTCG ATCCCTGTG ACGTGTGGGC AATGTTCCCT CTCTCTCTC TTCTCCCTG GAATCTGTGA AAGGTCTG  
CAAAGATGAT CAGTATGAAA ATGTCATTGT TCTGTGAAC CCAAAGTGTG ACTCATTAAA TGAAGTAAA TGTGTTTTA  
GGAATAC-3' (FRAG. NO: ) (SEQ. ID NO:2491)

5'-ATGAAGGTCT CCGCAGCACT TCTGTGGCTG CTGCTCATAG CAGCTGCCT CAGCCCCCAG GGGCTCGCTG GGCCAGCTTC  
TGTCCCAACC ACCTGCTGCT TTAACCTGGC CAATAGGAAG ATACCCCTTC AGCGACTAGA GAGCTACAGG AGAATCACC  
GTGGCAAATG TCCCCAGAAA GCTGTGATCT TCAAGACCAA ACTGGCCAAG GATATCTGTG CCGACCCCAA GAAGAAGTGG  
GTGCAGGATT CCATGAAGTA TCTGGACCAA AAATCTCCAA CTCCAAAGCC ATAA-3' (FRAG. NO: ) (SEQ. ID NO:2492)

5'-CCACATATTC CCTCCTTTT CCAAGGCAAG ATCCAGATGG ATTAATAAAT GTACCAAGTC CCTCTACTA GCTTGCTCT  
CTTCTGTTCT GCTTGACTTC CTAGGATCTG GAATCTGGTC AGCAATCAGG AATCCCTTCA TCGTGAACCC CGCATGGGCA  
AAGGCTTCCC TGAATCTCC CACACTGTCT GCTCCCTATA AAAGGCAGGC AGATGGGCCA GAGGAGCAGA GAGGCTGAGA  
CCAACCCAGA AACCACCACC TCTACGCCA AAGCTCACAC CTTCAGCTC CAACATGAAG GTCTCCGCAG CACTTCTGTG  
GCTGCTGCTC ATAGCAGCTG CCTCAGCCC CCAGGGGCTC GCTGGGCCAG GTAAGCCCC CAACTCCTTA CAGGAAAGGT  
AAGGTAACCA CTCCAGGCT ACTAGGTCAG CAAGAATCTT TACAGACTCA CTGCAAAATTC TCCATTTGAA AAATAGGGAA  
ACAGGTTTTG TGGGTGGACA AGAAATGCCT CAACCGTCAC ATCCAGTCAC TGAAGAGCC AGAAGTAGAA AGCTCCCGAG  
TCTTTTCCCC ACATTCAAGA GGGCCGCTGG GTGACTCCTT ACCAGCTAT CCTTACAGT TTTGGAATG GGAATGGCT  
CTGTCTTACT GTGGGCATGG TGGGCATTTT TGGCAGTGGG AGAGAAGGAA AATCTGTTGA TTAGAAGCTC AGTATGTTAA  
TTGACTCCA GGACAGCTTT CAGAGACAGT GGCTAAGAGA AGAAGGAGT CCCAGGGGAT CTCTTGAGGT GACTTATTTT  
GACACTCTTT GGGAAAGTTA TCTAGGAGAT TTGTCCATA ACTCATTTT CCATCTCTG GTGACAAATT TACTGAGTGT  
ATCGTGCCCA CTGAGCCAGT GCATAGCATG GTAACAAACA GTTCTAAAT ATCAATGACT TAACAGAATT AACTAAATTA  
ACAAAGTTA CTCTTCACT TGTACTAAAT ATCTATAATG TATGGGCTCA GGCTTCTGCA TTTTATACT AGGATTCTAG  
ACTGATGGAG AAGTTGCCAT GTGGGGGAAC ATTGATGAT ACTGTGATAA AGCAGAAGAA AGCTCTCAGG AGCTTGCAT  
AGGCAATGCA CTGTGGCTCA AAAATGACAC CCATCACTTT GTCTCCTTCT TTATTGATCA AAATAATTA ATGCTCCAA  
CCAAACAAA GTGGCCAAGA AATGCAAGTC TACCTTGTGT CTCAAAACAG AGGATGGAGA ATATTGGTG AAAATTACCA  
TGACCATCAC ATGGCCACGT AGGTCTTAT AATGACAGAG CTAGCATTG TCACATTGAC CAAGCTTGT CCATACACTC  
TACAGTAATG ATGATCCTC AGTGACAGG GGAGGATGCT GAAGACACAG GACAGCATCC TCCAGACACA TAAGACTTCA  
GAGCAGAGGG ATCTCCCTC CACCTCTCGC AATCTCTTCT TTCTCTTAC CTTCCTTAC AAAGTCATGC TTGGAATGT  
CTATGTATCA TCATGTGGCT CATTTTTTCT TCTGTCTTCT TTTTTCCC AAAATTCAGC TTCTGTCCA ACCACTGCT  
GCTTTAACCCT GGCCAATAGG AAGATACCCC TCAGCGACT AGAGAGCTAC AGGAGAATCA CCAGTGCCAA ATGTCCCGAG  
AAAGCTGTGA TGAAGTAAA TAAAGTTCAC CCTCCCTAG AAAAAAAT AATGTCTAGG GCACAGAGTC AAGAACTGTG  
GGAGTCATAG ACTCTGATAG TTTGACCTCT ATGGTCCAAT TCATTAATT TCACAAGTGA GTGTTCACTC CCAGCTCCCT  
GCCTGGGAGA TGCTGTAGT CATATCAATT TCTTCAAGTC AAGAGCAAAG ATGGTTTTAC TGGGCTTTA AGAGCAGCAA  
CTAACCCAAG ATCTCATCC TTCTCTCTC CCGTAGCAAC CCTTTGTCCA GGGGCAGATG GTCCTTAAAT ATTTAGGGTC  
AAATGGGCAG AATTTTCAAA AACAATCCTT CCAATTGCTC CTGATTCTC CCCACAGCTT CAAGACCAAA CTGGCCAAGG  
ATATCTGTGC CGACCCCAAG AAGAAGTGGG TGCAGGATTC CATGAAGTAT CTGGACCAAA AATCTCCAAC TCCAAAGCCA  
TAAATAATCA CCATTTTGA AACCAACCA GAGCCTGAGT GTTGCTAAT TTGTTTTCCC TTCTTACAAT GCATTCTGAG  
GTAACCTCAT TATCAGTCCA AAGGGCATGG GTTTTATTAT ATATATATAT ATATATTTTT TTTTAAAAAA AAACGTATTG  
CATTTAATTT ATTGAGGCTT TAAACTTAT CCTCCATGAA TATCAGTTAT TTTTAAACTG TAAAGCTTTG TGCAGATTCT  
TTACCCCTG GGAGCCCAA TTCATCCCC TGTCACGTGT GGGCAATGTT CCCCTCTCC TCTCTCTC CTGGAATCT  
TGTAAGGTC CTGGCAAAGA TGATCAGTAT GAAAATGTCA TTGTTCTGT GAACCCAAAG TGTGACTCAT TAAATGGAAG  
TAATGTTGTT TTAGGAATAC ATAAAGTATG TGCATATTTT ATTATAGTCA CTAGTTGTAA TTTTTTTGTG GGAATCCAC  
ACTGAGCTGA GGGG-3' (FRAG. NO: ) (SEQ. ID NO:2493)

#### **FK-506 Binding Protein Nucleic Acids and Oligonucleotide Fragments**

5'-GCCAGGTCGC TGTGGTCCA CGCCGCCGT CGCGCGCCC GCCCGCTCAG CGTCCGCCG CGCCATGGGA  
GGCCGGAGCC GAGCCGGGT CGGGCAGCAG CAGGGACCCC CCAGAGGCGG GGCCTGTGGG ACCGCTATGG GCGTGGAGAT  
CGAGACCATC TCCCCGGAG ACGGAAGGAC ATCCCAAG AAGGGCCAAA CGTGTGTTG GCACTACACA GGAATGCTCC  
AAATGGGAA GAAGTTTGTAT TCATCCAGAG ACAGAAACA ACCTTCAAG TTCAGAATTG GCAAACAGGA AGTCATCAA  
GGTTTTGAAG AAGGTGCAGC CCAGATGAGC TTGGGGCAGA GGGCGAAGCT GACCTGCACC CTGATGTGG CATATGGAGC  
CACGGGCCAC CCCGTGTCA TCCCTCCAA TGCCACCTC ATCTTGACG TGGAGCTGCT CAACTAGAG TGAAGGCAGG  
AAGGAACTCA AGGTGGCTGG AGATGGCTGC TGCTACCCT CTGACCTGC TCTGCCACTG GGACGGCTCC TGCTTTGGG  
GCTCTGATC AGTGTGCTAA CCTCACTGCC TCATGGCATC ATCCATTCTC TCTGCCAAG TTGCTCTGTA TGTGTTCTG

AGTGTTCATG CGAATTCTTG CTGAGGAAA CTCGGTTGC AGATTGAAGC ATTCAGGTT GTGCATTTTG TGTGATGCAT  
GTAGTAGCCT TTCCTGATGA CAGAACACAG ATCTCTTGT CGACAATCT ACCTGCCTT ACCTTCACTT AAACCACACA  
CACAAGGTGC TCAGACATGA AATGTACATG GCGTACCGTA CACAGAGGGA CTGAGCCAG TTACCTTTGC, TGTCATTTT  
TCTCTTATAA ATTCGTTAG CTGCTCACTT AAACAATGTC CTCTTTGAGA AAATGTAAAA TAAAGGCTCT GTGCTTGACA  
GAATTCGGGC CGCCGCCAGG TCGTGTGGG TCCACGCCGC CCGTCGCGCC GCCCGCCCGC TCAGCGTCCG CCGCCGCCAT  
GGGAGTGCAG GTGGAACCA TCTCCCAGG AGACGGGCGC ACCTTCCCCA AGCGCGGCCA GACCTGCGTG GTGCACTACA  
CCGGGATGCT TGAAGATGGA AAGAAATTG ATTCTCCCG GGACAGAAAC AAGCCCTTTA AGTTTATGCT AGGCAAGCAG  
GAGGTGATCC GAGGCTGGGA AGAAGGGGTT GCCCAGATGA GTGTGGGTCA GAGAGCCAAA CTGACTATAT CTCCAGATTA  
TGCTATGGT GCCACTGGC ACCCAGGCAT CATCCACCA CATGCCACTC TCGTCTTCGA TGTGGAGCTT CTAATACTGG  
AATGACAGGA ATGGCCTCCT CCCTTAGCTC CTGTCTTG GATCTGCCAT GGAGGGATCT GGTGCCTCCA GACATGTGCA  
CATGAGTCCA TATGGAGCTT TTCTGATGT TCCACTCCAC TTGTATAGA CATCTGCCCT GACTGAATGT GTTCTGTCAC  
TCAGCTTTGC TTCCGACACC TCTGTTTCTT CTTCCTCTT CTCTCGTAT GTGTGTTTAC CTAATACTATA TGCCATAAAC  
CTCAAGTTAT TCATTTTATT TTGTTTTCAT TTGGGGTGA AGATTCACTT TCAGTCTTTT GGATATAGGT TTCCAATTA  
GTACATGGTC AAGTATTAAC AGCACAAGTG GTAGGTAAAC ATTAGAATAG GAATTGGTGT TGGGGGGGGG GTTTGCAAGA  
ATATTTTATT TTAATTTTTT GGATGAAATT TTTATCTATT ATATATTAAC CATTCTTGCT GCTGCGCTGC AAAGCCATAG  
CAGATTTGAG GCGCTGTGA GGAAGTAACT ACTCTCAAG TTGAGAGATG TCTTTGGGT AAATTAAG CCCTACCTAA  
AACTGAGGTG GGGATGGGA GAGCCTTTC CTCCACCATT CCCACCCACC CTCCCTTAA ACCCTCTGCC TTGAAAGTA  
GATCATGTT ACTGCAATGC TGGACACTAC AGGTATCTGT CCCTGGGCCA GCAGGGACCT CTGAAGCCTT CTTTGTGGCC  
TTTTTTTTT TTCATCTGT GGTTTTTCTA ATGGACTTTC AGGAATTTT TAATCTCATA ACTTTCCAAG CTCCACCATT  
TCCTAAATCT TAAGAACTTT AATTGACAGT TTCAATTGAA GGTGCTGTTT GTAGACTTAA CACCCAGTGA AAGCCAGCC  
ATCATGACAA ATCCTTGAAT GTTCTCTTAA GAAAATGATG CTGGTCATCG CAGCTTCAGC ATCTCTGTT TTTTGTAGCT  
TGGCTCCCTC TGCTGATCTC AGTTTCTCTG CTCTTCTCC CTCAGCCCCT TCTACCCCCT TTGCTGTCCT GTGTAGTGAT  
TTGGTGAGAA ATCGTGTCTG CACCCTTCCC CCAGCACCATT TTATGAGTCT CAAGTTTAT TATTGCAATA AAAGTGCTTT  
ATGCCCCAAT TC GCCGCCGCCA TGGGAGTGCA GGTGGAACC ATCTCCCCAG GAGACGGGCG CACCTTCCCC  
AAGCGCGGCC AGACCTGCGT GGTGCACTAC ACCGGGATGC TTGAAGATGG AAAGAAATTT GATTCTCTCC GGGACAGAAA  
CAAGCCCTTT AAGTTTATGC TAGGCAAGCA GGAGGTGATC CGAGGCTGGG AAGAAGGGGT TGCCAGATG AGTGTGGTGC  
AGAGAGCCAA ACTGACTATA TCTCCAGATT ATGCTATGG TGCCACTGGG CACCCAGGCA TCATCCACC ACATGCCACT  
CTCGTCTCG ATGTGGAGCT TCTAAACTG GAATGACAGG AATGGCCTCC TCCCTAGCT CCTGTCTT GGATCTGCCR  
TGGAGGGATC TGGTGCTCC AGACATGTGC ACATGARTCC ATATGGAGCT TTTCTGATG TTCCACTCCA CTTGTATAG  
ACATCTGCCC TGAAGTAACT ATGCCATAAA CCTCAAGTTA TTCA-3' (FRAG. NO: ) (SEQ. ID NO:2499)

5'-GCCAGGTCG TGTGTGCA CGCCGCCCGT CGCGCCGCC GCCCGCTCAG CGTCCGCCG CGCATGGGA-3' (FRAG.  
No: ) (SEQ. ID NO: 2495)

5'-GGCCGGAGCC GAGCCGGGT CGGCGAGCAG CAGGACCCC CCAGAGGCGG GGCCTGTGGG ACCGCTATGG  
GCGTGGAGAT CGAGACCATC TCCCCGGAG ACGGAAGGAC ATCCCCAAG AAGGGCCAAA CGTGTGTGGT GCACTACACA  
GGAATGCTCC AAAATGGGAA GAAGTTTAT TCATCCAGAG ACAGAAACAA ACCTTTCAAG TTCAGAAATT GCAAACAGGA  
AGTCATCAAA GGTTTTGAAG AGGGTGACG CCAGATGAGC TTGGGGCAGA GGCGAAGCT GACCTGCACC CCTGATGTGG  
CATATGGAGC CACGGGCCAC CCCGGTGTA TCCCTCCAA TGCCACCTC ATCTTTGACG TGGAGCTGCT CAACTTAGAG  
TGAAGGACG AAGGAACCTA AGGTGGCTGG AGATGGCTGC TGCTCACCCT CTAAGCCTG TCTGCCACTG GGACGGCTCC  
TGCTTTTGGG GCTCTTGATC AGTGTGCTAA CCTCACTGCC TCATGGCCTC ATCCATTCTC TCTGCCAAG TTGCTGTGA  
TGTGTGCTC AGTGTTCATG CGAATCTTG CTGAGGAAA CTTCGGTTGC AGATTGAAGC ATTCAGGTT GTGCATTTTG  
TGTGATGCAT GTAGTAGCCT TTCCTGATGA CAGAACACAG ATCTCTTGT CGACAATCT ACCTGCCTT ACCTTCACTT  
AAACCACACA CACAAGGTGC TCAGACATGA AATGTACATG GCGTACCGTA CACAGAGGGA CTGAGCCAG TTACCTTTGC  
TGTCATTTT TCTCTATAA ATCTGTTAG CTGCTCACTT AAACAATGTC CTCTTTGAGA AAATGTAAAA TAAAGGCTCT  
GTGCTTGACA-3' (FRAG. NO: ) (SEQ. ID NO:2496)

5'-GAATTCGGGC CGCCGCCAGG TCGTGTGG TCCACGCCGC CCGTCGCGCC GCCCGCCCGC TCAGCGTCCG CCGCCGCCAT  
GGGAGTGCAG GTGGAACCA TCTCCCAGG AGACGGGCGC ACCTTCCCCA AGCGCGGCCA GACCTGCGTG GTGCACTACA  
CCGGGATGCT TGAAGATGGA AAGAAATTG ATTCTCCCG GGACAGAAAC AAGCCCTTTA AGTTTATGCT AGGCAAGCAG  
GAGGTGATCC GAGGCTGGGA AGAAGGGGTT GCCCAGATGA GTGTGGGTCA GAGAGCCAAA CTGACTATAT CTCCAGATTA  
TGCTATGGT GCCACTGGC ACCCAGGCAT CATCCACCA CATGCCACTC TCGTCTTCGA TGTGGAGCTT CTAATACTGG  
AATGACAGGA ATGGCCTCCT CCCTTAGCTC CTGTCTTG GATCTGCCAT GGAGGGATCT GGTGCCTCCA GACATGTGCA  
CATGAGTCCA TATGGAGCTT TTCTGATGT TCCACTCCAC TTGTATAGA CATCTGCCCT GACTGAATGT GTTCTGTCAC  
TCAGCTTTGC TTCCGACACC TCTGTTTCTT CTTCCTCTT CTCTCGTAT GTGTGTTTAC CTAATACTATA TGCCATAAAC  
CTCAAGTTAT TCATTTTATT TTGTTTTCAT TTGGGGTGA AGATTCACTT TCAGTCTTTT GGATATAGGT TTCCAATTA  
GTACATGGTC AAGTATTAAC AGCACAAGTG GTAGGTAAAC ATTAGAATAG GAATTGGTGT TGGGGGGGGG GTTTGCAAGA  
ATATTTTATT TTAATTTTTT GGATGAAATT TTTATCTATT ATATATTAAC CATTCTTGCT GCTGCGCTGC AAAGCCATAG  
CAGATTTGAG GCGCTGTGA GGAAGTAACT ACTCTCAAG TTGAGAGATG TCTTTGGGT AAATTAAG CCCTACCTAA  
AACTGAGGTG GGGATGGGA GAGCCTTTC CTCCACCATT CCCACCCACC CTCCCTTAA ACCCTCTGCC TTGAAAGTA  
GATCATGTT ACTGCAATGC TGGACACTAC AGGTATCTGT CCCTGGGCCA GCAGGGACCT CTGAAGCCTT CTTGTGGCC  
TTTTTTTTT TTCATCTGT GGTTTTTCTA ATGGACTTTC AGGAATTTT TAATCTCATA ACTTTCCAAG CTCCACCATT  
TCCTAAATCT TAAGAACTTT AATTGACAGT TTCAATTGAA GGTGCTGTTT GTAGACTTAA CACCCAGTGA AAGCCAGCC  
ATCATGACAA ATCCTTGAAT GTTCTCTTAA GAAAATGATG CTGGTCATCG CAGCTTCAGC ATCTCTGTT TTTTGTAGCT  
TGGTCCCTC TGCTGATCTC AGTTTCTCTG CTCTTCTCC CTCAGCCCCT TCTACCCCCT TTGCTGTCCT GTGTAGTGAT  
TTGGTGAGAA ATCGTGTCTG CACCCTTCCC CCAGCACCATT TTATGAGTCT CAAGTTTAT TATTGCAATA AAAGTGCTTT  
ATGCCCCAAT TC-3' (FRAG. NO: ) (SEQ. ID NO:2497)

5' GCCGCCGCCA TGGGAGTGCA GGTGGAACC ATCTCCCCAG GAGACGGGCG CACCTTCCCC AAGCGCGGCC  
AGACCTGCGT GGTGCACTAC ACCGGGATGC TTGAAGATGG AAAGAAATTT GATTCTCTCC GGGACAGAAA CAAGCCCTTT  
AAGTTTATGC TAGGCAAGCA GGAGGTGATC CGAGGCTGGG AAGAAGGGGT TGCCAGATG AGTGTGGTGC AGAGAGCCAA  
ACTGACTATA TCTCCAGATT ATGCTATGG TGCCACTGG CACCCAGGCA TCATCCACC ACATGCCACT CTCGTCTTCG

ATGTGGAGCT TCTAAACTG GAATGACAGG AATGGCCTCC TCCCTTAGCT CCCTGTTCTT GGATCTGCCR TGGAGGGATC  
 TGGTGCTCC AGACATGTGC ACATGARTCC ATATGGAGCT TTTCTGATG TTCCACTCCA CTTTGTATAG ACATCTGCCC  
 TGA CTGAATG TGTTCTGTCA CTCAGCTTTG CTTCCGACAC CTCTGTTTCC TCTTCCCCTT TCTCCTCGTA TGTGTGTTTA  
 CCTAAACTAT ATGCCATAAA CCTCAAGTTA TTCA-3' (FRAG. NO. ) (SEQ. ID NO:2498)

The present agents are also provided as a pharmaceutical composition comprising an anti-sense oligonucleotide as given above in an amount effective to reduce expression of a target mRNA, by passing through a cell membrane and binding specifically with target mRNA in the cell so as to prevent its translation are another aspect of the present invention. Such compositions are provided in a suitable pharmaceutically acceptable carrier, e.g. sterile pyrogen-free saline solution. The agent of the invention may be formulated with a hydrophobic carrier capable of passing through a cell membrane, e.g. in a liposome, with the liposomes carried in a pharmaceutically acceptable aqueous carrier. The oligonucleotides may be coupled to an agent which inactivates mRNA, such as a ribozyme. Such oligonucleotides may be administered to a subject in need of such treatment to inhibit the activation of A<sub>1</sub>, A<sub>2b</sub> and/or A<sub>3</sub> adenosine receptors. The pharmaceutical formulation may also comprise chimeric molecules comprising anti-sense oligonucleotides attached to molecules which are known to be internalized by cells. These oligonucleotide conjugates utilize cellular up-take pathways to increase intracellular concentrations of the oligonucleotide. Examples of molecules used in this manner are macromolecules including transferrin, asialoglycoprotein (bound to oligonucleotides via polylysine) and streptavidin, among others.

The anti-sense compound may be contained in the pharmaceutical formulation within a lipid particle or vesicle, such as a liposome or microcrystal. The particles may be of any suitable structure, such as unilamellar or plurilamellar. The one preferred embodiment, the anti-sense oligonucleotide is comprised within the liposome. Positively charged lipids such as N-[1-(2, 3 -dioleoyloxy) propyl] -N, N, N-trimethylammoniummethylsulfate, or "DOTAP", are particularly preferred for such particles and vesicles. However, others are also suitable. The preparation of such lipid particles is well known. See, e.g., US Patent Nos. 4,880,635 to Janoff et al., 4,906,477 to Kurono et al., 4,911,928 to Wallach, 4,917,951 to Wallach, 4,920,016 to Allen et al., 4,921,757 to Wheatley et al., the relevant sections of all of which are herein incorporated in their entireties by reference. The composition of the invention may be administered by any means which transports the agent to the lung(s). The present agent(s) may be administered to the lungs of a patient by any suitable means, but are preferably administered through the respiratory system as a respirable formulation, more preferably in the form of an aerosol comprising respirable particles which, in turn, comprise the agent for respiration or inhalation by the subject. The respirable particles may be in gaseous, liquid or solid form, and they may, optionally, contain other therapeutic ingredients and formulation components. The particles of the present invention are preferably particles of respirable size, preferably of a size sufficiently small to pass, upon inhalation, through the mouth and larynx and into the bronchi and alveoli of the lungs. In general, particles ranging from about 0.5 to 10 microns in diameter are respirable. However, other sizes may also be suitable. Particles of non-respirable size, of considerably larger diameter, which are included in the respirable formulation tend to deposit in the throat and may be swallowed. Accordingly, it is desirable to minimize the quantity of non-respirable particles in the aerosol. For nasal administration, a particle size in the range of 10-500 μm is preferred to ensure their retention in the nasal cavity. Liquid pharmaceutical compositions of the agent of the invention for producing a respirable formulation, e.g. an aerosol may be prepared by combining the anti-sense oligo with a suitable vehicle or carrier, such as sterile pyrogen-free water and/or other known pharmaceutically or veterinarily acceptable carrier. Other therapeutic compounds may be included as well as other formulation ingredients as is known in the art. Solid particulate compositions comprising respirable dry particles of, e.g. the micronized agent of the invention may be prepared by grinding the dry anti-sense compound with a mortar and pestle, and then passing the thus ground, e.g. micronized composition through a screen, e.g. 400 mesh screen, to break up or separate large agglomerates of particles. A solid particulate composition comprising the anti-sense compound may optionally also comprise a dispersant and other known agents, which serve to facilitate the formation of a mist or aerosol. A suitable dispersant is lactose, which may be blended with the anti-sense compound in any suitable ratio, about 1:1 w/w. Other ratios may be utilized as well, and other therapeutic and formulation agents may also be included.

The dosage of the anti-sense compound administered generally varies with the disease being treated, the condition of the subject, the particular formulation, the route of administration, the timing of administration to a subject, etc. In general, it is desirable to attain intracellular concentrations of the oligonucleotide of from 0.05 to 50 μM, or more particularly 0.2 to 5 μM, although not critical. For administration to a subject such as a human, a dosage of from about .01, preferably about 0.01, more preferably about 1 mg/Kg, to about 150, preferably about

100, and still more preferably about 50 mg/Kg are typically employed. Higher and lower doses may also be administered as an artisan will see suitable for specific application. These amounts are preferably administered every 24 hrs, although other regimens are also suitable. Depending on the solubility of the particular formulation of active compound administered, a daily dose may be divided among one or several unit dose administrations. Administration of the anti-sense compounds may be carried out therapeutically, i.e. as a rescue treatment, prophylactically, or as a chronic maintenance regimen.

Aerosols of liquid particles comprising the agent may be produced by any suitable means, such as with an insufflator or nebulizer. See, e.g., US Patent No. 4,501,729. Nebulizers are commercially available devices which transform solutions or suspensions of an agent into a therapeutic aerosol mist either by means of acceleration of a compressed gas, typically air or oxygen, e.g. through a narrow venturi orifice or by means of ultrasonic agitation. Suitable formulations for use in insufflators and nebulizers comprise the present agent, the agent of this invention, in an amount of about 0.01 to about 40%, preferably less than 20% w/w in a liquid carrier which is typically water or a dilute aqueous alcoholic solution, preferably made isotonic with body fluids by the addition of, for example, sodium chloride. Other carriers are also suitable. Optional additives include preservatives if the formulation is not prepared sterile, for example, methyl hydroxybenzoate, antioxidants, flavoring agents, volatile oils, buffering agents and surfactants, among others.

The pharmaceutical compositions provided herein comprise nucleic acid(s) comprising the anti-sense oligonucleotide(s) described above and one or more surfactants. Suitable surfactants or surfactant components for enhancing the uptake of the anti-sense oligonucleotides of the invention include synthetic and natural as well as full and truncated forms of surfactant protein A, surfactant protein B, surfactant protein C, surfactant protein D and surfactant Protein E, di-saturated phosphatidylcholine (other than dipalmitoyl), dipalmitoylphosphatidylcholine, phosphatidylcholine, phosphatidylglycerol, phosphatidylinositol, phosphatidylethanolamine, phosphatidylserine; phosphatidic acid, ubiquinones, lysophosphatidylethanolamine, lysophosphatidylcholine, palmitoyl-lysophosphatidylcholine, dehydroepiandrosterone, dolichols, sulfatidic acid, glycerol-3-phosphate, dihydroxyacetone phosphate, glycerol, glycerol-3-phosphocholine, dihydroxyacetone, palmitate, cytidine diphosphate (CDP) diacylglycerol, CDP choline, choline, choline phosphate; as well as natural and artificial lamellar bodies which are the natural carrier vehicles for the components of surfactant, omega-3 fatty acids, polyenic acid, polyenoic acid, lecithin, palmitic acid, non-ionic block copolymers of ethylene or propylene oxides, polyoxypropylene, monomeric and polymeric, polyoxyethylene, monomeric and polymeric, poly(vinyl amine) with dextran and/or alkanoyl side chains, Brij 35, Triton X-100 and synthetic surfactants ALEC, Exosurf, Survan and Atovaquone, among others. These surfactants may be used either as single or part of a multiple component surfactant in a formulation, or as covalently bound additions to the 5' and/or 3' ends of the anti-sense oligonucleotides (oligos).

The composition of the invention may be administered by any means which transports the anti-sense nucleotide and the surfactant composition to the lung. The antisense compounds disclosed herein may be administered to the lungs of a patient by any suitable means, but are preferably administered by inhalation of an aerosol comprised of respirable particles which comprise the anti-sense compound. The respirable particles may be liquid or solid, and they may optionally contain other therapeutic or diagnostic ingredients as well as other typical ingredients for a particular formulation. Examples of other agents are analgesics such as acetaminophen, anilerdine, aspirin, buprenorphine, butabital, butorphanol, Choline Salicylate, Codeine, Dezocine, Diclofenac, Diflunisal, Dihydrocodeine, Elcatonin, Etodolac, Fenoprofen, Hydrocodone, Hydromorphone, Ibuprofen, Ketoprofen, Ketorolac, Levorphanol, Magnesium Salicylate, Meclofenamate, Mefenamic Acid, Meperidine, Methadone, Methotrimeprazine, Morphine, Nalbuphine, Naproxen, Opium, Oxycodone, Oxymorphone, Pentazocine, Phenobarbital, Propoxyphene, Salsalate, Sodium Salicylate, Tramadol and Narcotic analgesics in addition to those listed above. See, Mosby's Physician's GenRx. Anti-anxiety agents are also useful including Alprazolam, Bromazepam, Buspirone, Chlordiazepoxide, Chlormezanone, Clorazepate, Diazepam, Halazepam, Hydroxyzine, Ketasolam, Lorazepam, Meprobamate, Oxazepam and Prazepam, among others. Anti-anxiety agents associated with mental depression, such as Chlordiazepoxide, Amitriptyline, Loxapine, Maprotiline and Perphenazine, among others. Anti-inflammatory agents such as non-rheumatic Aspirin, Choline Salicylate, Diclofenac, Diflunisal, Etodolac, Fenoprofen, Fluctafenine, Flurbiprofen, Ibuprofen, Indomethacin, Ketoprofen, Magnesium Salicylate, Meclofenamate, Mefenamic Acid, Nabumetone, Naproxen, Oxaprozin, Phenylbutazone, Piroxicam, Salsalate, Sodium Salicylate, Sulindac, Tenoxicam, Tiaprofenic Acid, Tilmetin, anti-inflammatories for

ocular treatment such as Diclofenac, Flurbiprofen, Indomethacin, Ketorolac, Rimexolone (generally for post-operative treatment), anti-inflammatories for, non-infectious nasal applications such as Beclomethaxone, Budesonide, Dexamethasone, Flunisolide, Triamcinolone, and the like. Soporifics (anti-insomnia/sleep inducing agents) such as those utilized for treatment of insomnia, including Alprazolam, Bromazepam, Diazepam, Diphenhydramine, Doxylamine, Estazolam, Flurazepam, Halazepam, Ketazolam, Lorazepam, Nitrazepam, Prazepam, Quazepam, Temazepam, Triazolam, Zolpidem and Sopiclone, among others. Sedatives including Diphenhydramine, Hydroxyzine, Methotrimeprazine, Promethazine, Propofol, Melatonin, Trimeprazine, and the like. Sedatives and agents used for treatment of petit mal and tremors, among other conditions, such as Amitriptyline HCl; Chlordiazepoxide, Amobarbital; Secobarbital, Aprobital, Butabarbital, Ethchlorvynol, Glutethimide, L-Tryptophan, Mephobarbital, Methohexital Na, Midazolam HCl, Oxazepam, Pentobarbital Na, Phenobarbital, Secobarbital Na, Thiamylal Na, and many others. Agents used in the treatment of head trauma (Brain Injury/Ischemia), such as Enadoline HCl (e.g. for treatment of severe head injury; orphan status, Warner Lambert), cytoprotective agents, and agents for the treatment of menopause, menopausal symptoms (treatment), e.g. Ergotamine, Belladonna Alkaloids and Phenobarbital, for the treatment of menopausal vasomotor symptoms, e.g. Clonidine, Conjugated Estrogens and Medroxyprogesterone, Estradiol, Estradiol Cypionate, Estradiol Valerate, Estrogens, conjugated Estrogens, esterified Estrone, Estropipate, and Ethinyl Estradiol. Examples of agents for treatment of pre menstrual syndrome (PMS) are Progesterone, Progestin, Gonadotrophic Releasing Hormone, Oral contraceptives, Danazol, Luprolide Acetate, Vitamin B6. Examples of agents for treatment of emotional/psychiatric treatments such as Tricyclic Antidepressants, including Amitriptyline HCl (Elavil), Amitriptyline HCl, Perphenazine (Triavil) and Doxepin HCl (Sinequan). Examples of tranquilizers, antidepressants and anti-anxiety agents are Diazepam (Valium), Lorazepam (Ativan), Alprazolam (Xanax), SSRIs (selective serotonin reuptake inhibitors), Fluoxetine HCl (Prozac), Sertaline HCl (Zoloft), Paroxetine HCl (Paxil), Fluvoxamine Maleate (Luvox), Venlafaxine HCl (Effexor), Serotonin, Serotonin Agonists (Fenfluramine), and other over the counter (OTC) medications.

The composition of the present invention may be administered into the respiratory system as a formulation including particles of respirable size, e.g. particles of a size sufficiently small to pass through the nose, mouth and larynx upon inhalation and through the bronchi and alveoli of the lungs. In general, respirable particles range from about .5 to 10 microns in size. Particles of non-respirable size which are included in the aerosol tend to deposit in the throat and be swallowed, and the quantity of non-respirable particles in the aerosol is thus minimized. For nasal administration, a particle size in the range of 10-500  $\mu$ m is preferred to ensure retention in the nasal cavity. Aerosols or mists of solid particles comprising the agent of the invention may likewise be produced with any device that generates solid particulate medicament aerosols or mists. Aerosol and mist generators are suitable for administering solid particulate medicaments. These devices produce respirable particles, as explained above, and generate a volume of aerosol or mist containing a predetermined metered dose of a medicament at a rate suitable for human or animal administration. One illustrative type of solid particulate aerosol generator is an insufflator. Suitable formulations for administration by insufflation include finely comminuted powders which may be delivered by means of an insufflator or taken into the nasal cavity in the manner of a snuff. In the insufflator, the powder, e.g. a metered dose of the agent effective to carry out the treatments described herein, is contained in a capsule or a cartridge. These capsules or cartridges are typically made of gelatin or plastic, and may be pierced or opened in situ, and the powder delivered by air drawn through the device upon inhalation or by means of a manually-operated pump. The powder employed in the insufflator may consist either solely of the agent or of a powder blend comprising the agent, a suitable powder diluent, such as lactose, and an optional surfactant as well as other agents. The agent typically comprises from 0.01 to 100 w/w of the formulation. A second type of illustrative aerosol generator comprises a metered dose inhaler. Metered dose inhalers are pressurized aerosol dispensers, typically comprising a suspension or solution formulation of the active ingredient in a liquified propellant. During use these devices discharge the formulation through a valve adapted to deliver a metered volume, typically about 10 to 150  $\mu$ l, although other volumes are also suitable, to produce a fine particle spray containing the active ingredient. Suitable propellants include solvents such as certain chlorofluorocarbon compounds, for example, dichlorodifluoromethane, trichlorofluoromethane, dichlorotetrafluoroethane and/or mixtures thereof. The formulation may additionally comprise one or more co-solvents, for example, ethanol, surfactants, such as oleic acid or sorbitan trioleate, antioxidants and suitable flavoring agents. The aerosol, whether formed from solid or liquid particles, may be produced by the aerosol generator at a rate of from about 10 to 150 liters per minute, more preferably from about



30 to 150 liters per minute, and most preferably about 60 liters per minute. Aerosols containing greater amounts of medicament may be administered more rapidly.

The following examples are provided to illustrate the present invention, and should not be construed as limiting thereon. In these examples, :M means micromolar, ml means milliliters, :M means micrometers, mm means millimeters, cm means centimeters, EC means degrees Celsius, :g means micrograms, mg means milligrams, g means grams, kg means kilograms, M means molar, and h means hours.

### EXAMPLES

#### Example 1: Design and Synthesis of Anti-sense Oligonucleotides

The design of anti-sense oligonucleotides against the A<sub>1</sub> and A<sub>2</sub> adenosine receptors may require the solution of the complex secondary structure of the target A<sub>1</sub> receptor mRNA and the target A<sub>2</sub> receptor mRNA. After generating this structure, anti-sense nucleotides are designed which target regions of mRNA which might be construed to confer functional activity or stability to the mRNA and which optimally may overlap the initiation codon. Other target sites are readily usable. As a demonstration of specificity of the anti-sense effect, other oligonucleotides not totally complementary to the target mRNA, but containing identical nucleotide compositions on a w/w basis, are included as controls in anti-sense experiments. The mRNA secondary structure of the adenosine A<sub>1</sub> receptor was analyzed and used as described above to design a phosphorothioate anti-sense oligonucleotide. The anti-sense oligonucleotide which was synthesized was designated HAdA<sub>1</sub>AS and had the following sequence: 5'-GAT GGA GGG CGG CAT GGC GGG-3' (SEQ ID NO:1). As a control, a mismatched phosphorothioate anti-sense nucleotide designated HAdA<sub>1</sub>MM1 was synthesized with the following sequence: 5'-GTA GCA GGC GGG GAT GGG GGC-3' (SEQ ID NO:2). Each oligonucleotide had identical base content and general sequence structure. Homology searches in GENBANK (release 85.0) and EMBL (release 40.0) indicated that the anti-sense oligonucleotide was specific for the human and rabbit adenosine A<sub>1</sub> receptor genes, and that the mismatched control was not a candidate for hybridization with any known gene sequence.

The secondary structure of the adenosine A<sub>2</sub> receptor mRNA was similarly analyzed and used as described above to design two phosphorothioate anti-sense oligonucleotides. The first anti-sense oligonucleotide (HAdA<sub>2</sub>AS1) synthesized had the following sequence: 5'-GTT GTT GGG CAT CTT GCC-3' (SEQ ID NO:3). As a control, a mismatched phosphorothioate anti-sense oligonucleotide (HAdA<sub>2</sub>MM1) was synthesized, having the following sequence: 5'-GTA CTT GCG GAT CTA GGC-3' (SEQ ID NO:4). A second phosphorothioate anti-sense oligonucleotide (HAdA<sub>2</sub>AS2) was also designed and synthesized, having the following sequence: 5'-GTG GGC CTA GCT CTC GCC-3' (SEQ ID NO:5). Its control oligonucleotide (HAdA<sub>2</sub>MM2) had the sequence: 5'-GTC GGG GTA CCT GTC GGC-3' (SEQ ID NO:6). Phosphorothioate oligonucleotides were synthesized on an Applied Biosystems Model 396 Oligonucleotide Synthesizer, and purified using NENSORB chromatography (DuPont, MD).

#### Example 2: In Vivo Testing of Adenosine A<sub>1</sub> Receptor Anti-sense Oligos

The anti-sense oligonucleotide against the human A<sub>1</sub> receptor (SEQ ID NO:1) described above was tested for efficacy in an in vitro model utilizing lung adenocarcinoma cells HTB-54. HTB-54 lung adenocarcinoma cells were demonstrated to express the A<sub>1</sub> adenosine receptor using standard northern blotting procedures and receptor probes designed and synthesized in the laboratory. HTB-54 human lung adenocarcinoma cells (106/100 mm tissue culture dish) were exposed to 5.0 :M HAdA<sub>1</sub>AS or HAdA<sub>1</sub>MM1 for 24 hours, with a fresh change of media and oligonucleotides after 12 hours of incubation. Following 24 hour exposure to the oligonucleotides, cells were harvested and their RNA extracted by standard procedures. A 21-mer probe corresponding to the region of mRNA targeted by the anti-sense (and therefore having the same sequence as the anti-sense, but not phosphorothioated) was synthesized and used to probe northern blots of RNA prepared from HAdA<sub>1</sub>AS-treated, HAdA<sub>1</sub>MM1-treated and non-treated HTB-54 cells. These blots showed clearly that HAdA<sub>1</sub>AS but not HAdA<sub>1</sub>MM1 effectively reduced human adenosine receptor mRNA by >50%. This result showed that HAdA<sub>1</sub>AS is a good candidate for an anti-asthma drug since it depletes intracellular mRNA for the adenosine A<sub>1</sub> receptor, which is involved in asthma.

#### Example 3: In Vivo Efficacy of Adenosine A<sub>1</sub> Receptor Anti-sense Oligos

A fortuitous homology between the rabbit and human DNA sequences within the adenosine A<sub>1</sub> gene overlapping the initiation codon permitted the use of the phosphorothioate anti-sense oligonucleotides initially designed for use against the human adenosine A<sub>1</sub> receptor in a rabbit model. Neonatal New Zealand white Pasteurella-free rabbits were immunized intraperitoneally within 24 hours of birth with 312 antigen units/ml house dustmite (*D. farinae*) extract (Berkeley Biologicals, Berkeley, CA), mixed with 10% kaolin. Immunizations were

repeated weekly for the first month and then biweekly for the next 2 months. At 3-4 months of age, eight sensitized rabbits were anesthetized and relaxed with a mixture of ketamine hydrochloride (44 mg/kg) and acepromazine maleate (0.4 mg/kg) administered intramuscularly. The rabbits were then laid supine in a comfortable position on a small molded, padded animal board and intubated with a 4.0-mm intratracheal tube (Mallinkrodt, Inc., Glens Falls, NY). A polyethylene catheter of external diameter 2.4 mm with an attached latex balloon was passed into the esophagus and maintained at the same distance (approximately 16 cm) from the mouth throughout the experiments. The intratracheal tube was attached to a heated Fleisch pneumotachograph (size 00; DOM Medical, Richmond, VA), and flow was measured using a Validyne differential pressure transducer (Model DP-45161927; Validyne Engineering Corp., Northridge, CA) driven by a Gould carrier amplifier (Model 11-4113; Gould Electronic, Cleveland, OH). The esophageal balloon was attached to one side of the differential pressure transducer, and the outflow of the intratracheal tube was connected to the opposite side of the pressure transducer to allow recording of transpulmonary pressure. Flow was integrated to give a continuous tidal volume, and measurements of total lung resistance (RL) and dynamic compliance (C<sub>dyn</sub>) were calculated at isovolumetric and flow zero points, respectively, using an automated respiratory analyzer (Model 6; Buxco, Sharon, CT). Animals were randomized and on Day 1 pretreatment values for PC50 were obtained for aerosolized adenosine. Anti-sense (HAdA1AS) or mismatched control (HAdAIMM) oligonucleotides were dissolved in sterile physiological saline at a concentration of 5000 :g (5 mg) per 1.0 ml. Animals were subsequently administered the aerosolized anti-sense or mismatch oligonucleotide via the intratracheal tube (approximately 5000 :g in a volume of 1.0 ml), twice daily for two days. Aerosols of either saline, adenosine, or anti-sense or mismatch oligonucleotides were generated by an ultrasonic nebulizer (DeVilbiss, Somerset, PA), producing aerosol droplets 80% of which were smaller than 5 :m in diameter. In the first arm of the experiment, four randomly selected allergic rabbits were administered anti-sense oligonucleotide and four the mismatched control oligonucleotide. On the morning of the third day, PC50 values (the concentration of aerosolized adenosine in mg/ml required to reduce the dynamic compliance of the bronchial airway 50% from the baseline value) were obtained and compared to PC50 values obtained for these animals prior to exposure to oligonucleotide. Following a 1 week interval, animals were crossed over, with those previously administered mismatch control oligonucleotide now administered anti-sense oligonucleotide, and those previously treated with anti-sense oligonucleotide now administered mismatch control oligonucleotide. Treatment methods and measurements were identical to those employed in the first arm of the experiment. It should be noted that in six of the eight animals treated with anti-sense oligonucleotide, adenosine-mediated bronchoconstriction could not be obtained up to the limit of solubility of adenosine, 20 mg/ml. For the purpose of calculation, PC50 values for these animals were set at 20 mg/ml. The values given therefore represent a minimum figure for anti-sense effectiveness. Actual effectiveness was higher. The results of this experiment are illustrated in Table 3 below.

**Table 3:** Effect of Adenosine A<sub>1</sub> Receptor Anti-sense Oligo upon PC50 Values in Asthmatic Rabbits

Mismatch Control		A <sub>1</sub> Receptor Anti-sense Oligo	
Pre Oligonucleotide	Post Oligonucleotide	Pre Oligonucleotide	Post Oligonucleotide
3.56 ± 1.02	5.16 ± 1.03	2.36 ± 0.68	>19.5 ± 0.34**

The results are presented as the mean (n=8) ± SEM.

The significance was determined by repeated-measures analysis of variance (ANOVA), and Tukey's protected test.

\*\*Significantly different from all other groups, p<0.01.

In both arms of the experiment, animals receiving the anti-sense oligonucleotide showed an order of magnitude increase in the dose of aerosolized adenosine required to reduce dynamic compliance of the lung by 50%. No effect of the mismatched control oligonucleotide upon PC50 values was observed. No toxicity was observed in any animal receiving either anti-sense or control inhaled oligonucleotide. These results show clearly that the lung has exceptional potential as a target for anti-sense oligonucleotide-based therapeutic intervention in lung disease. They further show, in a model system which closely resembles human asthma, that downregulation of the adenosine A<sub>1</sub> receptor largely eliminates adenosine-mediated bronchoconstriction in asthmatic airways. Bronchial hyperresponsiveness in the allergic rabbit model of human asthma is an excellent endpoint for anti-sense intervention since the tissues involved in this response lie near to the point of contact with aerosolized oligonucleotides, and the model closely simulates an important human disease.

**Example 4:** Specificity of A<sub>1</sub>-adenosine Receptor Anti-sense Oligonucleotide

At the conclusion of the cross-over experiment of Example 3 above, airway smooth muscle from all rabbits was quantitatively analyzed for adenosine A<sub>1</sub> receptor number. As a control for the specificity of the anti-sense oligonucleotide, adenosine A<sub>2</sub> receptors, which should not have been affected, were also quantified. Airway smooth muscle tissue was dissected from each rabbit and a membrane fraction prepared according to the method of Kleinstein et al. (Kleinstein, J. and Glossmann, H., Naunyn-Schmiedeberg's Arch. Pharmacol. 305: 191-200 (1978)), the relevant portion of which is hereby incorporated in its entirety by reference, with slight modifications. Crude plasma membrane preparations were stored at 70EC until the time of assay. Protein content was determined by the method of Bradford (M. Bradford, Anal. Biochem. 72, 240-254 (1976), the relevant portion of which is hereby incorporated in its entirety by reference). Frozen plasma membranes were thawed at room temperature and were incubated with 0.2 U/ml adenosine deaminase for 30 minutes at 37EC to remove endogenous adenosine. The binding of [<sup>3</sup>H] DPCPX (A<sub>1</sub> receptor-specific) or [<sup>3</sup>H] CGS-21680 (A<sub>2</sub> receptor-specific) was measured as previously described by Ali et al. (Ali, S. et al., J. Pharmacol. Exp. Ther. 268, Am. J. Physiol 266, L271-277 (1994), the relevant portion of which is hereby incorporated in its entirety by reference). The animals treated with adenosine A<sub>1</sub> anti-sense oligonucleotide in the cross-over experiment had a nearly 75% decrease in A<sub>1</sub> receptor number compared to controls, as assayed by specific binding of the A<sub>1</sub>-specific antagonist DPCPX. There was no change in adenosine A<sub>2</sub> receptor number, as assayed by specific binding of the A<sub>2</sub> receptor-specific agonist 2-[p-(2-carboxyethyl)-phenethylamino]-5'-(N-ethylcarboxamido) adenosine (CGS-21680). This is illustrated in Table 4 below.

**Table 4: Specificity of Action of Adenosine A<sub>1</sub> Receptor Anti-sense Oligonucleotide**

	Mismatch Control Oligonucleotide	A <sub>1</sub> Anti-sense Oligonucleotide
A <sub>1</sub> -Specific Binding	1105 ± 48**	293 ± 18
A <sub>2</sub> -Specific Binding	302 ± 22	442 ± 171

The results are presented as the mean (n = 8) ± SEM.

The significance was determined by repeated-measures analysis of variance (ANOVA), and Tukey's protected test.

\*\*Significantly different from mismatch control, p<0.01.

The above results illustrate the effectiveness of anti-sense oligonucleotides in treating airway disease. Since the anti-sense oligos described above eliminate the receptor systems responsible for adenosine-mediated bronchoconstriction, it may be less imperative to eliminate adenosine from them. However, it would be preferable to eliminate adenosine from even these oligonucleotides to reduce the dose needed to attain a similar effect. Described above are other anti-sense oligonucleotides targeting mRNA of proteins involved in inflammation. Adenosine has been eliminated from their nucleotide content to prevent its liberation during degradation.

**Example 5: Anti-sense Oligos directed to other Target Nucleic Acids**

This work was conducted to demonstrate that the present invention is broadly applicable to anti-sense oligonucleotides ("oligos") specific to nucleic acid targets broadly. The following experimental studies were conducted to show that the method of the invention is broadly suitable for use with anti-sense oligos designed as taught by this application and targeted to any and all adenosine receptor mRNAs. For this purpose, various anti-sense oligos were prepared to adenosine receptor mRNAs exemplified by the adenosine A<sub>1</sub>, A<sub>2b</sub> and A<sub>3</sub> receptor mRNAs. Anti-sense Oligo I was disclosed above (SEQ. ID NO:1). Five additional anti-sense phosphorothioate oligos were designed and synthesized as indicated above.

- 1- Oligo II (SEQ. ID NO: 7) also targeted to the adenosine A<sub>1</sub> receptor, but to a different region than Oligo I.
- 2- Oligo V (SEQ. ID NO: 10) targeted to the adenosine A<sub>2b</sub> receptor.
- 3- Oligos III (SEQ. ID NO: 8) and IV (SEQ. ID NO: 9) targeted to different regions of the adenosine A<sub>3</sub> receptor.
- 4- Oligo I-PD (SEQ. ID NO: 1681) (a phosphodiester oligo of the same sequence as Oligo I).

These anti-sense oligos were designed for therapy on a selected species as described above and are generally specific for that species, unless the segment of the target mRNA of other species happens to contain a similar sequence. All anti-sense oligos were prepared as described below, and tested in vivo in a rabbit model for bronchoconstriction, inflammation and allergy, which have breathing difficulties and impeded lung airways, as is the case in ailments such as asthma, as described in the above-identified application.

**Example 6: Design & Sequences of other Anti-sense Oligos**

Six oligos and their effects in a rabbit model were studied and the results of these studies are reported and discussed below. Five of these oligos were selected for this study to complement the data on Oligo I (SEQ ID NO: 1) provided in Examples 1 to 4 above. This oligo is anti-sense to one region of the adenosine A<sub>1</sub> receptor mRNA. The oligos tested are identified as anti-sense Oligos I (SEQ ID NO: 1) and II (SEQ. ID NO: 7) targeted to a different region of the adenosine A<sub>1</sub> receptor mRNA, Oligo V (SEQ. ID NO: 8) targeted to the adenosine A<sub>2b</sub> receptor mRNA, and anti-sense Oligos III and IV (SEQ. ID NOS: 9 and 10) targeted to two different regions of the adenosine A<sub>3</sub> receptor mRNA. The sixth oligo (Oligo I-PD) is a phosphodiester version of Oligo I (SEQ. ID NO: 1). The design and synthesis of these anti-sense oligos was performed in accordance with Example 1 above.

(I) **Anti-sense Oligo I:** The anti-sense oligonucleotide I referred to in Examples 1 to 4 above is targeted to the human A<sub>1</sub> adenosine receptor mRNA (EPI 2010). Anti-sense oligo I is 21 nucleotide long, overlaps the initiation codon, and has the following sequence: 5'-GAT GGA GGG CGG CAT GGC GGG-3' (SEQ. ID NO: 1). The oligo I was previously shown to abrogate the adenosine-induced bronchoconstriction in allergic rabbits, and to reduce allergen-induced airway obstruction and bronchial hyperresponsiveness (BHR), as discussed above and shown by Nyce, J. W. & Metzger, W. J., *Nature*, 385:721 (1977), the relevant portions of which reference are incorporated in their entirety herein by reference.

(II) **Anti-sense Oligo II:** A phosphorothioate anti-sense oligo (SEQ. ID NO: 7) was designed in accordance with the invention to target the rabbit adenosine A<sub>1</sub> receptor mRNA region +936 to +956 relative to the initiation codon (start site). The anti-sense oligo II is 21 nucleotide long, and has the following sequence: 5'-CTC GTC GCC GTC GCC GGC GGG-3' (SEQ. ID NO: 7).

(III) **Anti-sense Oligo III:** A phosphorothioate anti-sense oligo other than that provided in Example 1 above (SEQ. ID NO: 8) was designed in accordance with the invention to target the anti-sense A<sub>3</sub> receptor mRNA region +3 to +22 relative to the initiation codon start site. The anti-sense oligo III is 20 nucleotide long, and has the following sequence: 5'-GGG TGG TGC TAT TGT CGG GC-3' (SEQ. ID NO: 8).

(IV) **Anti-sense Oligo IV:** Yet another phosphorothioate anti-sense oligo (SEQ. ID NO: 9) was designed in accordance with the invention to target the adenosine A<sub>3</sub> receptor mRNA region +386 to +401 relative to the initiation codon (start site). The anti-sense oligo IV is 15 nucleotide long, and has the following sequence: 5'-GGC CCA GGG CCA GCC-3' (SEQ. ID NO: 9).

(V) **Anti-sense Oligo V:** A phosphorothioate anti-sense oligo (SEQ. ID NO: 10) was designed in accordance with the invention to target the adenosine A<sub>2b</sub> receptor mRNA region -21 to -1 relative to the initiation codon (start site). The anti-sense oligonucleotide V is 21 nucleotide long, and has the following sequence: 5'-GGC CGG GCC AGC CGG GCC CGG-3' (SEQ. ID NO: 10).

(VI) **A<sub>1</sub> Mismatch Oligos:** Two different mismatched oligonucleotides having the following sequences were used as controls for anti-sense oligo I (SEQ. ID NO: 1) described in Example 5 above.

A<sub>1</sub> MM2 5'-GTA GGT GGC GGG CAA GGC GGG-3' (SEQ. ID NO: 1682)

A<sub>1</sub> MM3 5'-GAT GGA GGC GGG CAT GGC GGG-3' (SEQ. ID NO: 1683)

Anti-sense oligo I and the two mismatch anti-sense oligos had identical base content and general sequence structure. Homology searches in GENBANK (release 85.0) and EMBL (release 40.0) indicated that the anti-sense oligo I was specific, not only for the human, but also for the rabbit, adenosine A<sub>1</sub> receptor genes, and that the mismatched controls were not candidates for hybridization with any known human or animal gene sequence.

(VII) **Anti-sense Oligo A<sub>1</sub>-PD (Oligo VI):** A phosphodiester anti-sense oligo (Oligo VI; SEQ. ID NO: 1681) having the same nucleotide sequence as Oligo I was designed as disclosed in the above-identified application. Anti-sense oligo I-PD is 21 nucleotide long, overlaps the initiation codon, and has the following sequence:

5'-GAT GGA GGG CGG CAT GGC GGG-3' (SEQ. ID NO: 1681)

(VIII) **Controls:** Each rabbit was administered 5.0 ml aerosolized sterile saline following the same schedule as for the anti-sense oligos in (II), (III), and (IV) above.

#### **Example 7: Synthesis of Anti-sense Oligos**

Phosphorothioate anti-sense oligos having the sequences described in (a) above, were synthesized on an Applied Biosystems Model 396 Oligonucleotide Synthesizer, and purified using NENSORB chromatography (DuPont, DE). TETD (tetraethylthiuram disulfide) was used as the sulfurizing agent during the synthesis. Anti-sense oligonucleotide II (SEQ. ID NO: 7), anti-sense oligonucleotide III (SEQ. ID NO: 8) and anti-sense oligonucleotide IV (SEQ. ID NO: 9) were each synthesized and purified in this manner.

#### **Example 8: Preparation of Allergic Rabbits**

Neonatal New Zealand white Pasturella-free rabbits were immunized intraperitoneally within 24 hours of birth with 0.5 ml of 312 antigen units/ml house dust mite (*D. farinae*) extract (Berkeley Biologicals, Berkeley, CA) mixed with 10% kaolin as previously described (Metzger, W. J., in Late Phase Allergic Reactions, Dorsch, W., Ed., CRC Handbook, pp. 347-362, CRC Press, Boca Raton (1990); Ali, S., Metzger, W. J. and Mustafa, S. J., Am. J. Resp. Crit. Care Med. 149: 908 (1994)), the relevant portions of which are incorporated in their entirety here by reference. Immunizations were repeated weekly for the first month and then biweekly until the age of 4 months. These rabbits preferentially produce allergen-specific IgE antibody, typically respond to aeroallergen challenge with both an early and late-phase asthmatic response, and show bronchial hyperresponsiveness (BHR). Monthly intraperitoneal administration of allergen (312 units dust mite allergen, as above) continues to stimulate and maintain allergen-specific IgE antibody and BHR. At 4 months of age, sensitized rabbits were prepared for aerosol administration as described by Ali et al. (Ali, S., Metzger, W. J. and Mustafa, S. J., Am. J. Resp. Crit. Care Med. 149 (1994)), the relevant section being incorporated in its entirety here by reference.

### **DOSE-RESPONSE STUDIES**

#### **Example 9: Experimental Setup**

Aerosols of either adenosine (0-20 mg/ml), or anti-sense or one of two mismatch oligonucleotides (5 mg/ml) were separately prepared with an ultrasonic nebulizer (Model 646, DeVilbiss, Somerset, PA), which produced aerosol droplets, 80% of which were smaller than 5 µm in diameter. Equal volumes of the aerosols were administered directly to the lungs via an intratracheal tube. The animals were randomized, and administered aerosolized adenosine. Day 1 pre-treatment values for sensitivity to adenosine were calculated as the dose of adenosine causing a 50% loss of compliance (PC<sub>50</sub> Adenosine). The animals were then administered either the aerosolized anti-sense or one of the mismatch anti-sense oligos via the intratracheal tube (5 mg/1.0 ml), for 2 minutes, twice daily for 2 days (total dose, 20 mg). Post-treatment PC<sub>50</sub> values were recorded (post-treatment challenge) on the morning of the third day. The results of these studies are provided in Example 21 below.

#### **Example 10: Crossover Experiments**

For some experiments utilizing anti-sense oligo I (SEQ ID NO: 1) and a corresponding mismatch control oligonucleotide A1MM2, following a 2 week interval, the animals were crossed over, with those previously administered the mismatch control A1MM2, now receiving the anti-sense oligo I, and those previously treated with the anti-sense oligo I, now receiving the mismatch control A1MM2 oligo. The number of animals per group was as follows. For mismatch A1MM2 (Control 1), n=7, since one animal was lost in the second control arm of the experiment due to technical difficulties, for mismatch A1MM3 n=4 (Control 2) and for A1AS anti-sense oligo I, n=8. The A1MM3 oligo-treated animals were analyzed separately and were not part of the cross-over experiment. The treatment methods and measurements employed following the cross-over were identical to those employed in the first arm of the experiment. In 6 of the 8 animals treated with the anti-sense oligo I (SEQ. ID NO: 1), no PC<sub>50</sub> value could be obtained for adenosine doses of up to 20 mg/ml, which is the limit of solubility of adenosine. Accordingly, the PC<sub>50</sub> values for these animals were assumed to be 20 mg/ml for calculation purposes. The values given, therefore, represent a minimum figure for the effectiveness of the anti-sense oligonucleotides of the invention. Other groups of allergic rabbits (n=4 for each group) were administered 0.5 or 0.05 mg doses of the anti-sense oligo I (SEQ ID NO: 1), or the A1MM2 oligo in the manner and according to the schedule described above (the total doses being 2.0 or 0.2 mg). The results of these studies are provided in Example 22 below.

#### **Example 11: Anti-sense Oligo Formulation**

Each one of anti-sense oligos were separately solubilized in an aqueous solution and administered as described for anti-sense oligo I (SEQ. ID No:1) in (e) above, in four 5 mg aliquots (20 mg total dose) by means of a nebulizer via endotracheal tube, as described above. The results obtained for anti-sense oligo I and its mismatch controls confirmed that the mismatch controls are equivalent to saline, as described in Example 19 below and in Table 1 of Nyce & Metzger, Nature 385, 721-725 (1997). Because of this finding, saline was used as a control for pulmonary function studies employing anti-sense oligos II, III and IV (SEQ. ID NOS; 7, 8 and 9).

#### **Example 12: Specificity of Oligo I for Adenosine A<sub>1</sub> Receptor (Receptor Binding Studies)**

Tissue from airway smooth muscle was dissected to primary, secondary and tertiary bronchi from rabbits which had been administered 20 mg oligo I (SEQ ID NO: 1) in 4 divided doses over a period of 48 hours as described above. A membrane fraction was prepared according to the method of Ali et al. (Ali, S., et al., Am. J. Resp. Crit. Care Med. 149: 908 (1994), the relevant section relating to the preparation of the membrane fraction is incorporated in its entirety hereby by reference). The protein content was determined by the method of Bradford

and plasma membranes were incubated with 0.2 U/ml adenosine deaminase for 30 minutes at 37°C to remove endogenous adenosine. See, Bradford, M. M. Anal. Biochem. 72, 240-254 (1976), the relevant portion of which is hereby incorporated in its entirety by reference. The binding of [<sup>3</sup>H]DPCPX, [<sup>3</sup>H]NPC17731, or [<sup>3</sup>H]CGS-21680 was measured as described by Jarvis et al. See, Jarvis, M.F., et al., Pharmacol. Exptl. Ther. 251, 888-893 (1989), the relevant portion of which is fully incorporated herein by reference. The results of this study are shown in Table 8 and discussed in Example 20 below.

**Example 13: Pulmonary Function Measurements (Compliance,  $C_{dyn}$  and Resistance)**

At 4 months of age, the immunized animals were anesthetized and relaxed with 1.5 ml of a mixture of ketamine HCl (35 mg/kg) and acepromazine maleate (1.5 mg/kg) administered intramuscularly. After induction of anesthesia, allergic rabbits were comfortably positioned supine on a soft molded animal board. Salve was applied to the eyes to prevent drying, and they were closed. The animals were then intubated with a 4.0 mm intermediate high-low cuffed Murphy I endotracheal tube (Mallinckrodt, Glen Falls, NY), as previously described by Zavala and Rhodes. See, Zavala and Rhodes, Proc. Soc. Exp. Biol. Med. 144: 509-512 (1973), the relevant portion of which is incorporated herein by reference in its entirety. A polyethylene catheter of OD 2.4 mm (Becton Dickinson, Clay Adams, Parsippany NJ) with an attached thin-walled latex balloon was passed into the esophagus and maintained at the same distance (approximately 16 cm) from the mouth throughout the experiment. The endotracheal tube was attached to a heated Fleisch pneumotach (size 00; DEM Medical, Richmond, VA), and the flow ( $v$ ) measured using a Validyne differential pressure transducer (Model DP-45-16-1927, Validyne Engineering, Northridge, CA), driven by a Gould carrier amplifier (Model 11-4113, Gould Electronics, Cleveland, OH). An esophageal balloon was attached to one side of the Validyne differential pressure transducer, and the other side was attached to the outflow of the endotracheal tube to obtain transpulmonary pressure ( $P_{tp}$ ). The flow was integrated to yield a continuous tidal volume, and the measurements of total lung resistance ( $R_t$ ) and dynamic compliance ( $C_{dyn}$ ) were made at isovolumetric and zero flow points. The flow, volume and pressure were recorded on an eight channel Gould 2000 W high-frequency recorder and  $C_{dyn}$  was calculated using the total volume and the difference in  $P_{tp}$  at zero flow, and  $R_t$  was calculated as the ratio of  $P_{tp}$  and  $V$  at midtidal lung volumes. These calculations were made automatically with the Buxco automated pulmonary mechanics respiratory analyzer (Model 6, Buxco Electronics, Sharon, CT), as previously described by Giles et al. See, Giles et al., Arch. Int. Pharmacodyn. Ther. 194: 213-232 (1971), the relevant portion of which describing these calculations is incorporated in toto hereby by reference. The results obtained upon administration of oligo II on allergic rabbits are shown and discussed in Example 26 below.

**Example 14: Measurement of Bronchial Hyperresponsiveness (BHR)**

Each allergic rabbit was administered histamine by aerosol to determine their baseline hyperresponsiveness. Aerosols of either saline or histamine were generated using a DeVilbiss nebulizer (DeVilbiss, Somerset, PA) for 30 seconds and then for 2 minutes at each dose employed. The ultrasonic nebulizer produced aerosol droplets of which 80% were <5 micron in diameter. The histamine aerosol was administered in increasing concentrations (0.156 to 80 mg/ml) and measurements of pulmonary function were made after each dose. The BHR was then determined by calculating the concentration of histamine (mg/ml) required to reduce the  $C_{dyn}$  50% from baseline ( $PC_{50}$  Histamine).

**Example 15: Cardiovascular Effect of Anti-sense Oligo I**

The measurement of cardiac output and other cardiovascular parameters using CardiomaxJ utilizes the principle of thermal dilution in which the change in temperature of the blood exiting the heart after a venous injection of a known volume of cool saline is monitored. A single rapid injection of cool saline was made into the right atrium via cannulation of the right jugular vein, and the corresponding changes in temperature of the mixed injectate and blood in the aortic arch were recorded via cannulation of the carotid artery by a temperature-sensing miniprobe. Twelve hours after the allergic rabbits had been treated with aerosols of oligo I (EPI 2010; SEQ. ID NO: 1) as described in (d) above, the animals were anesthetized with 0.3 ml/kg of 80% Ketamine and 20% Xylazine. This time point coincides with previous data showing efficacy for SEQ. ID NO: 1, as is clearly shown by Nyce & Metzger, (1997), supra, the pertinent disclosure being incorporated in its entirety here by reference. A thermocouple was then inserted into the left carotid artery of each rabbit, and was then advanced 6.5 cm and secured with a silk ligature. The right jugular vein was then cannulated and a length of polyethylene tubing was inserted and secured. A thermodilution curve was then established on a CardiomaxJ II (Columbus Instruments, Ohio) by injecting sterile saline at 20°C to determine the correctness of positioning of the



thermocouple probe. After establishing the correctness of the position of the thermocouple, the femoral artery and vein were isolated. The femoral vein was used as a portal for drug injections, and the femoral artery for blood pressure and heart rate measurements. Once constant baseline cardiovascular parameters were established, CardiomaxJ measurements of blood pressure, heart rate, cardiac output, total peripheral resistance, and cardiac contractility were made.

**Example 16: Duration of Action of Oligo I (SEQ. ID NO: 1)**

Eight allergic rabbits received initially increasing log doses of adenosine by means of a nebulizer via an intra-tracheal tube as described in (f) above, beginning with 0.156 mg/ml until compliance was reduced by 50% ( $PC_{50}$  Adenosine) to establish a baseline. Six of the rabbits then received four 5 mg aerosolized doses of (SEQ. ID NO: 1) as described above. Two rabbits received equivalent amounts of saline vehicle as controls. Beginning 18 hours after the last treatment, the  $PC_{50}$  Adenosine values were tested again. After this point, the measurements were continued for all animals each day, for up to 10 days. The results of this study are discussed in Example 25 below.

**Example 17: Reduction of Adenosine  $A_{2b}$  Receptor Number by Anti-sense Oligo V**

Sprague Dawley rats were administered 2.0 mg respirable anti-sense oligo V (SEQ ID NO:10) three times over two days using an inhalation chamber as described above. Twelve hours after the last administration, lung parenchymal tissue was dissected and assayed for adenosine  $A_{2b}$  receptor binding using [311]-NECA as described by Nyce & Metzger (1997), supra. Controls were conducted by administration of equal volumes of saline. The results are significant at  $p < 0.05$  using Student's paired t test, and are discussed in Example 28 below.

**Example 18: Comparison of Oligo I & Corresponding Phosphodiester Oligo VI (SEQ. ID NO:1681)**

Oligo I (SEQ ID NO:1) countered the effects of adenosine and eliminated sensitivity to it for adenosine amounts up to 20 mg adenosine/5.0 ml (the limit of solubility of adenosine). Oligo VI (SEQ ID NO:1681), the phosphodiester version of the oligonucleotide sequence, was completely ineffective when tested in the same manner. Both compounds have identical sequence, differing only in the presence of phosphorothioate residues in Oligo I (SEQ ID NO:1), and were delivered as an aerosol as described above and in Nyce & Metzger (1997), supra. Significantly different at  $p < 0.001$ , Student's paired t test. The results are discussed in Example 29 below.

**RESULTS OBTAINED FOR ANTI-SENSE OLIGO I (SEQ. ID NO: 1)**

**Example 19: Results of Prior Work**

The nucleotide sequence and other data for anti-sense oligo I (SEQ. ID NO: 1), which is specific for the adenosine  $A_1$  receptor, were provided above. The experimental data showing the effectiveness of oligo I in down regulating the receptor number and activity were also provided above. Further information on the characteristics and activities of anti-sense oligo I is provided in Nyce, J. W. and Metzger, W. J., Nature 385:721 (1997), the relevant parts of which relating to the following results are incorporated in their entireties herein by reference. The Nyce & Metzger (1997) publication provided data showing that the anti-sense oligo I (SEQ. ID NO: 1):

- (1) The anti-sense oligo I reduces the number of adenosine  $A_1$  receptors in the bronchial smooth muscle of allergic rabbits in a dose-dependent manner as may be seen in Table 5.
- (2) Anti-sense Oligo I attenuates adenosine-induced bronchoconstriction and allergen-induced bronchoconstriction.
- (3) The Oligo I attenuates bronchial hyperresponsiveness as measured by  $PC_{50}$  histamine, a standard measurement to assess bronchial hyperresponsiveness. This result clearly demonstrates anti-inflammatory activity of the anti-sense oligo I as is shown in Table 5.
- (4) As expected, because it was designed to target it, the anti-sense oligo I is totally specific for the adenosine  $A_1$  receptor, and has no effect at all at any dose on either the very closely related adenosine  $A_2$  receptor or the related bradykinin  $B_2$  receptor. This is seen in Table 5.
- (5) In contradistinction to the above effects of the Oligo I, the mismatch control molecules MM2 and MM3 (SEQ. ID NO:1682 and SEQ. ID NO:1683) which have identical base composition and molecular weight but differed from the anti-sense oligo I (SEQ ID NO: 1) by 6 and 2 mismatches, respectively. These mismatches, which are the minimum possible while still retaining identical base composition, produced absolutely no effect upon any of the targeted receptors ( $A_1$ ,  $A_2$  or  $B_2$ ).

These results, along with a complete lack of prior art on the use of anti-sense oligonucleotides, such as oligo I, targeted to the adenosine  $A_1$  receptor, are unexpected results. The showings presented in this patent clearly enable and demonstrate the effectiveness, for their intended use, of the claimed agents and method for treating a disease or condition associated with lung airway, such as bronchoconstriction, inflammation, allergy(ies), and the like.

**Example 20: Oligo I Significantly Reduces Response to Adenosine Challenge**

The receptor binding experiment is described in Example 12 above, and the results shown in Table 5 below which shows the binding characteristics of the adenosine A<sub>1</sub>-selective ligand [<sup>3</sup>H]DPCPX and the bradykinin B<sub>2</sub>-selective ligand [<sup>3</sup>H]NPC 17731 in membranes isolated from airway smooth muscle of A<sub>1</sub> adenosine receptor and B<sub>2</sub> bradykinin receptor anti-sense- and mismatch-treated allergic rabbits.

**Table 5: Binding Characteristics of Three Anti-Sense Oligos**

Treatment <sup>1</sup>	A <sub>1</sub> receptor		B <sub>2</sub> receptor	
	K <sub>d</sub>	B <sub>max</sub>	K <sub>d</sub>	B <sub>max</sub>
<b>Adenosine A<sub>1</sub> Receptor</b>				
20 mg	0.36±0.029 nM	19±1.52 fmoles*	0.39±0.031 nM	14.8±0.99 fmoles
2 mg	0.38±0.030 nM	32±2.56 fmoles*	0.41±0.028 nM	15.5±1.08 fmoles
0.2 mg	0.37±0.030 nM	49±3.43 fmoles	0.34±0.024 nM	15.0±1.06 fmoles
<b>A<sub>1</sub>MM1 (Control)</b>				
20 mg	0.34±0.027 nM	52.0±3.64 fmoles	0.35±0.024 nM	14.0±1.0 fmoles
2 mg	0.37±0.033 nM	51.8±3.88 fmoles	0.38±0.028 nM	14.6±1.02 fmoles
<b>B<sub>2</sub>A (Bradykinin Receptor)</b>				
20 mg	0.36±0.028 nM	45.0±0.15 fmoles	0.38±0.027 nM	8.7±0.62 fmoles*
2 mg	0.39±0.035 nM	44.3±2.90 fmoles	0.34±0.024 nM	11.9±0.76 fmoles**
0.2 mg	0.40±0.028 nM	47.0±3.76 fmoles	0.35±0.028 nM	15.1±1.05 fmoles
<b>B<sub>2</sub>MM (Control)</b>				±
20 mg	0.39±0.031 nM	42.0±2.94 fmoles	0.41±0.029 nM	14.0±0.98 fmoles
2 mg	0.41±0.035 nM	40.0±3.20 fmoles	0.37±0.030 nM	14.8±0.99 fmoles
0.2 mg	0.37±0.029 nM	43.0±3.14 fmoles	0.36±0.025 nM	15.1±1.35 fmoles
<b>Saline Control</b>	0.37±0.041	46.0±5.21	0.39±0.047 nM	14.2±1.35 fmoles

<sup>1</sup>Refers to total oligo administered in four equivalently divided doses over a 48 hour period. Treatments and analyses were performed as described in methods. Significance was determined by repeated-measures analysis of variance (ANOVA), and Tukey's protected t test. n = 4-6 for all groups.

\* Significantly different from mismatch control- and saline-treated groups, p<0.001.

\*\*Significantly different from mismatch control- and saline-treated groups, p<0.05.

**Example 21: Dose-response Effect of Oligo I**

Anti-sense oligo I (SEQ ID NO:1) was found to reduce the effect of adenosine administration to the animal in a dose-dependent manner over the dose range tested as shown in Table 6 below.

**Table 6: Dose-Response Effect to Anti-sense Oligo I**

Tal Dose (mg)	PC <sub>50</sub> Adenosine (mg Adenosine)
<b>Anti-sense Oligo I</b>	
0.2	8.32±7.2
2.0	14.0±7.2
20	19.5±0.34
<b>A<sub>1</sub>MM2 oligo (control)</b>	
0.2	2.51±0.46
2.0	3.13±0.71
20	3.25±0.34

The above results were found by the Student's paired t test statistically different,  $p=0.05$

The oligo I (SEQ. ID NO:1), an anti-adenosine A<sub>1</sub> receptor oligo, acts specifically on the adenosine A<sub>1</sub> receptor, but not on the adenosine A<sub>2</sub> receptors. These results stem from the treatment of rabbits with anti-sense oligo I (SEQ. ID NO:1) or mismatch control oligo (SEQ. ID NO:1682; A<sub>1</sub>MM2) as described in Example 9 above and in Nyce & Metzger (1997), supra (four doses of 5 mg spaced 8 to 12 hours apart via nebulizer via endotracheal tube), bronchial smooth muscle tissue excised and the number of adenosine A<sub>1</sub> and adenosine A<sub>2</sub> receptors determined as reported in Nyce & Metzger (1997), supra.

**Example 22: Specificity of Oligo I (SEQ. ID NO:1) for Target Gene Product**

Oligo I (SEQ. ID NO:1) is specific for the adenosine A<sub>1</sub> receptor whereas its mismatch controls had no activity. Figure 1 depicts the results obtained from the cross-over experiment described in Example 10 above and in Nyce & Metzger (1997), supra. The two mismatch controls (SEQ. ID NO:1682 and SEQ. ID NO:1683) evidenced no effect on the PC<sub>50</sub> Adenosine value. On the contrary, the administration of anti-sense oligo I (SEQ. ID NO:1) showed a seven-fold increase in the PC<sub>50</sub> Adenosine value. The results clearly indicate that the anti-sense oligo I (SEQ. ID NO:1) reduces the response (attenuates the sensitivity) to exogenously administered adenosine when compared with a saline control. The results provided in Table 2 above clearly establish that the effect of the anti-sense oligo I is dose dependent (see, column 3 of Table 1). The Oligo I was also shown to be totally specific for the adenosine A<sub>1</sub> receptor, (see, top 3 rows of Table), inducing no activity at either the closely related adenosine A<sub>2</sub> receptor or the bradykinin B<sub>2</sub> receptor (see, lines 8-10 of Table 2 above). In addition, the results shown in Table 2 establish that the anti-sense oligo I (SEQ. ID NO:1) decreases sensitivity to adenosine in a dose dependent manner, and that it does this in an anti-sense oligo-dependent manner since neither of two mismatch control oligonucleotides (A<sub>1</sub>MM2; SEQ. ID NO:1682 and A<sub>1</sub>MM3; SEQ. ID NO:1683) show any effect on PC<sub>50</sub> Adenosine values or on attenuating the number of adenosine A<sub>1</sub> receptors.

**Example 23: Effect on Aeroallergen-induced Bronchoconstriction & Inflammation**

The Oligo I (SEQ. ID NO:1) was shown to significantly reduce the histamine-induced effect in the rabbit model when compared to the mismatch oligos. The effect of the anti-sense Oligo I (SEQ. ID NO:1) and the mismatch oligos (A<sub>1</sub>MM2, SEQ. ID NO:1682 and A<sub>1</sub>MM3, SEQ. ID NO:1682) on allergen-induced airway obstruction and bronchial hyperresponsiveness was assessed in allergic rabbits. The effect of the anti-sense oligo I (SEQ. ID NO:1) on allergen-induced airway obstruction was assessed. As calculated from the area under the plotted curve, the anti-sense oligo I significantly inhibited allergen-induced airway obstruction when compared with the mismatched control (55%,  $p<0.05$ ; repeated measures ANOVA, and Tukey's t test). A complete lack of effect was induced by the mismatch oligo A<sub>1</sub>MM2 (Control) on allergen induced airway obstruction. The effect of the anti-sense oligo I (SEQ. ID NO:1) on allergen-induced BHR was determined as above. As calculated from the PC<sub>50</sub> Histamine value, the anti-sense oligo I (SEQ. ID NO:1) significantly inhibited allergen-induced BHR in allergic rabbits when compared to the mismatched control (61%,  $p<0.05$ ; repeated measures ANOVA, Tukey's t test). A complete lack of effect of the A<sub>1</sub>MM mismatch control on allergen-induced BHR was observed. The results indicated that anti-sense oligo I (SEQ. ID NO:1) is effective to protect against aeroallergen-induced bronchoconstriction (house dust mite). In addition, the anti-sense oligo I (SEQ. ID NO:1) was also found to be a

potent inhibitor of dust mite-induced bronchial hyper responsiveness, as shown by its effects upon histamine sensitivity which indicates anti-inflammatory activity for anti-sense oligo I (SEQ. ID NO:1).

**Example 24: Anti-sense Oligo I is Free of Deleterious Side Effects**

The Oligo I (SEQ. ID NO:1) was shown to be free of side effects that might be toxic to the recipient. No changes in arterial blood pressure, cardiac output, stroke volume, heart rate, total peripheral resistance or heart contractility (dPdT) were observed following administration of 2.0 or 20 mg oligo I (SEQ. ID NO:1). The addition, the results of the measurement of cardiac output (CO), stroke volume (SV), mean arterial pressure (MAP), heart rate (HR), total peripheral resistance (TPR), and contractility (dPdT) with a CardiomaxJ apparatus (Columbus Instruments, Ohio) were assessed. These results evidenced that oligo I (SEQ. ID NO:1) has no detrimental effect upon critical cardiovascular parameters. More particularly, this oligo does not cause hypotension. This finding is of particular importance because other phosphorothioate anti-sense oligonucleotides have been shown in the past to induce hypotension in some model systems. Furthermore, the adenosine A<sub>1</sub> receptor plays an important role in sinoatrial conduction within the heart. Attenuation of the adenosine A<sub>1</sub> receptor by anti-sense oligo I (SEQ. ID NO:1) might be expected to result, therefore, in deleterious extrapulmonary activity in response to the downregulation of the receptor. This is not the case. The anti-sense oligo I (SEQ. ID NO:1) does not produce any deleterious intrapulmonary effects and renders the administration of the low doses of the present anti-sense oligo free of unexpected, undesirable side effects. This demonstrates that when oligo I (SEQ. ID NO:1) is administered directly to the lung, it does not reach the heart in significant quantities to cause deleterious effects. This is in contrast to traditional adenosine receptor antagonists like theophylline which do escape the lung and can cause deleterious, even life-threatening effects outside the lung.

**Example 25: Long Lasting Effect of Oligo I**

The Oligo I (SEQ. ID NO:1) evidenced a long lasting effect as evidenced by the PC<sub>50</sub> and Resistance values obtained upon its administration prior to adenosine challenge. The duration of the effect was measured for with respect to the PC<sub>50</sub> of adenosine anti-sense oligo I when administered in four equal doses of 5 mg each by means of a nebulizer via an endotracheal tube, as described above. The effect of the agent is significant over days 1 to 8 after administration. When the effect of the anti-sense oligo I (SEQ. ID NO:1) had disappeared, the animals were administered saline aerosols (controls), and the PC<sub>50</sub> Adenosine values for all animals were measured again. Saline-treated animals showed base line PC<sub>50</sub> adenosine values (n=6). The duration of the effect (with respect to Resistance) was measured for six allergic rabbits which were administered 20 mg of anti-sense oligo I (SEQ. ID NO: 1) as described above, upon airway resistance measured as also described above. The mean calculated duration of effect was 8.3 days for both PC<sub>50</sub> adenosine (p<0.05) and resistance (p<0.05). These results show that anti-sense oligo I (SEQ. ID NO:1) has an extremely long duration of action, which is completely unexpected.

**Example 26: Anti-sense Oligo II**

Anti-sense oligo II, targeted to a different region of the adenosine A<sub>1</sub> receptor mRNA, was found to be highly active against the adenosine A<sub>1</sub>-mediated effects. The experiment measured the effect of the administration of anti-sense oligo II (SEQ. ID NO:7) upon compliance and resistance values when 20 mg anti-sense oligo II or saline (control) were administered to two groups of allergic rabbits as described above. Compliance and resistance values were measured following an administration of adenosine or saline as described above in Example 13. The effect of the anti-sense oligo of the invention was different from the control in a statistically significant manner, p<0.05 using paired t-test, compliance; p<0.01 for resistance. The results showed that anti-sense oligo II (SEQ. ID NO:7), which targets the adenosine A<sub>1</sub> receptor, effectively maintains compliance and reduces resistance upon adenosine challenge.

**Example 27: Antisense Oligos III and IV**

Oligos III (SEQ. ID NO:8) and IV (SEQ. ID NO:9) were shown to be in fact specifically targeted to the adenosine A<sub>1</sub> receptor by their effect on reducing inflammation and the number of inflammatory cells present upon separate administration of 20 mg of the anti-sense oligos III (SEQ. ID NO:8) and IV (SEQ. ID NO:9) to allergic rabbits as described above. The number of inflammatory cells was determined in their bronchial lavage fluid 3 hours later by counting at least 100 viable cells per lavage. The effect of anti-sense oligos III (SEQ. ID NO:8) and IV (SEQ. ID NO:9) upon granulocytes, and upon total cells in bronchial lavage were assessed following exposure to dust mite allergen. The results showed that the anti-sense oligo IV (SEQ. ID NO:9) and anti-sense oligo III (SEQ. ID NO:8) are very potent anti-inflammatory agents in the asthmatic lung following exposure to dust mite allergen. As is known in the art, granulocytes, especially eosinophils, are the primary inflammatory cells of

asthma, and the administration of anti-sense oligos III (SEQ. ID NO:8) and IV (SEQ. ID NO:9) reduced their numbers by 40% and 66%, respectively. Furthermore, anti-sense oligos IV (SEQ. ID NO:9) and III (SEQ. ID NO:8) also reduced the total number of cells in the bronchial lavage fluid by 40% and 80%, respectively. This is also an important indicator of anti-inflammatory activity by the present anti-adenosine A<sub>1</sub> agents of the invention. Inflammation is known to underlie bronchial hyperresponsiveness and allergen-induced bronchoconstriction in asthma. Both anti-sense oligonucleotides III (SEQ. ID NO:8) and IV (SEQ. ID NO:9), which are targeted to the adenosine A<sub>1</sub> receptor, are representative of an important new class of anti-inflammatory agents which may be designed to specifically target the lung receptors of each species.

**Example 28: Anti-sense Oligo V**

The anti-sense oligo V (SEQ. ID NO:10), targeted to the adenosine A<sub>2b</sub> adenosine receptor mRNA was shown to be highly effective at countering adenosine A<sub>2b</sub>-mediated effects and at reducing the number of adenosine A<sub>2b</sub> receptors present to less than half.

**Example 29: Unexpected Superiority of Substituted over Phosphodiester-residue Oligo I-DS (SEQ. ID NO:1681)**

Oligos I (SEQ. ID NO:1) and I-DS (SEQ. ID NO:1681) were separately administered to allergic rabbits as described above, and the rabbits were then challenged with adenosine. The phosphodiester oligo I-DS (SEQ. ID NO:1681) was statistically significantly less effective in countering the effect of adenosine whereas oligo I (SEQ. ID NO:1) showed high effectiveness, evidencing a PC<sub>50 Adenosine</sub> of 20 mg.

**Example 30: Anti-sense Oligo VI**

For the present work, I designed an additional anti-sense phosphorothioate oligo targeted to the adenosine A<sub>1</sub> receptor (Oligo VI). This anti-sense oligo was designed for therapy on a selected species as described in the above patent application and is generally specific for that species, unless the segment of the adenosine receptor mRNA of other species elected happens to have a similar sequence. The anti-sense oligos were prepared as described below, and tested in vivo in a rabbit model for bronchoconstriction, inflammation and lung allergy, which have breathing difficulties and impeded lung airways, as is the case in ailments such as asthma, as described in the above-identified application. One additional oligo and its effect in a rabbit model was studied and the results of the study are reported and discussed below. The present oligo (anti-sense oligo VI) was selected for this study to complement the data on SEQ ID NO: 1 (Oligo I), which is anti-sense to the adenosine A<sub>1</sub> receptor mRNA, provided in the above-identified patent application. This additional oligo is identified as anti-sense Oligo VI, and is targeted to a different region of the adenosine A<sub>1</sub> receptor mRNA than Oligo I. The design and synthesis of this anti-sense oligo was performed in accordance with the teaching, particularly Example 1, of the above-identified patent application. The anti-sense Oligo VI is a phosphorothioate designed to target the coding region of the rabbit adenosine A<sub>1</sub> receptor mRNA region +964 to +984 relative to the initiation codon (start site). The Oligo VI was prepared as described in the above-indicated application, and is 20 nucleotides long. The Oligo VI is directed to the adenosine A<sub>1</sub> receptor gene, and has the following sequence: 5'-CGC CGG CGG GTG CGG GCC GG-3' (SEQ. ID NO: ). The phosphorothioate anti-sense Oligo VI having the sequence described in (5) above, was synthesized on an Applied Biosystems Model 396 Oligonucleotide Synthesizer, and purified using NENSORB chromatography (DuPont, DE). TETD (tetraethylthiuram disulfide) was used as the sulfurizing agent during the synthesis.

**Example 31: Preparation of Allergic Rabbits**

Neonatal New Zealand white Pasturella-free rabbits were immunized intraperitoneally within 24 hours of birth with 0.5 ml of 312 antigen units/ml house dust mite (*D. farinae*) extract (Berkeley Biologicals, Berkeley, CA) mixed with 10% kaolin as previously described (Metzger, W. J., in Late Phase Allergic Reactions, Dorsch, W., Ed., CRC Handbook, pp 347-362, CRC Press, Boca Raton, 1990; Ali, S. Et al., Am. J. Resp. Crit. Care Med. 149: 908 (1994)). The immunizations were repeated weekly for the first month and then bi-weekly until the animals were 4 months old. These rabbits preferentially produce allergen-specific IgE antibody, typically respond to aeroallergen challenge with both an early and late-phase asthmatic response, and show bronchial hyper responsiveness (BHR). Monthly intraperitoneal administration of allergen (312 units dust mite allergen, as above) continues to stimulate and maintain allergen-specific IgE antibody and BHR. At 4 months of age, sensitized rabbits were prepared for aerosol administration as described by Ali et al. (1994), supra.

**Example 32: Adenosine Aerosol Preparation**

An adenosine aerosol (20 mg/ml) was prepared with an ultrasonic nebulizer (Model 646, DeVilbiss, Somerset, PA), which produced aerosol droplets, 80% of which were smaller than 5:μm in diameter. Equal volumes of the aerosols were administered directly to the lungs via an intratracheal tube to all three rabbits. The animals

were then administered the aerosolized adenosine and Day 1 pre-treatment values for sensitivity to adenosine were calculated as the dose of adenosine causing a 50% loss of compliance ( $PC_{50}$  Adenosine). The animals were then administered the aerosolized anti-sense via the intratracheal tube (5 mg/1.0 ml), for 2 minutes, twice daily for 2 days (total dose, 20 mg). Post-treatment  $PC_{50}$  values were recorded (post-treatment challenge) on the morning of the third day. The results of these studies are provided in (9) below.

**Example 33: Anti-sense Oligo Formulation**

Each one of anti-sense oligos were separately solubilized in an aqueous solution and administered as described for anti-sense oligo I in (e) above, in four 5 mg aliquots (20 mg total dose) by means of a nebulizer via endotracheal tube, as described above.

**Example 34: Oligo VI Reduces Response to Adenosine Challenge as well or Better than Oligo I**

Oligo VI was tested in three allergic rabbits of the characteristics and readied as described in (7) above and in the above-indicated patent application. Oligo VI targets a section of the coding region of the  $A_1$  receptor which is different from Oligo I. Both these target sequences were selected randomly from many possible coding region target sequences. The three rabbits were treated identically as previously indicated for Oligo I. Briefly, 5 mg of Oligo VI were nebulized to the rabbits twice per day at 8 hour intervals, for two days. Thereafter,  $PC_{50}$  adenosine studies were performed on the morning of the third day and compared to pre-treatment  $PC_{50}$  values. This protocol is described in more detail in Nyce and Metzger (Nyce & Metzger, Nature 385: 721-725 (1997)). The results obtained for the three rabbits are shown in Table 1 below.

**Table 1:  $PC_{50}$  Adenosine before & after Aerosolized Adenosine Treatment**

Treatment Time (mg)	$PC_{50}$ Adenosine
Pre-treatment	3.0+2.1
Post-treatment	>20.0*

\* maximum achievable dose due to adenosine insolubility in saline

All three animals treated with Oligo VI completely eliminated sensitivity to adenosine up to the measurable level of the agent shown in Table 1 above. That is, the administration of the Oligo VI abrogated the adenosine-induced bronchoconstriction in the three allergic rabbits. The actual efficacy of Oligo VI is, therefore, greater than could be measured in the experimental system used. By comparing with the previously submitted results for the Oligo I, it may be seen that the Oligo VI was found to be as effective, or more, than Oligo I.

**Example 34: Conclusions**

The work described and results discussed in the examples clearly indicates that all anti-sense oligonucleotides designed in accordance with the teachings of the above-identified application were found to be highly effective at countering or reducing effects mediated by the receptors they are targeted to. That is, each and all of the two anti-sense oligos targeting an adenosine  $A_1$  receptor mRNA, 1 anti-sense oligo targeting an adenosine  $A_{2b}$  receptor mRNA, and the 2 anti-sense oligos targeting an  $A_3$  receptor mRNA were shown capable of countering the effect of exogenously administered adenosine which is mediated by the specific receptor they are targeted to. The activity of the anti-sense oligos of this invention, moreover, is specific to the target and substitutively fails to inhibit another target. In addition, the results presented also show that the administration of the present agents results in extremely low or non-existent deleterious side effects or toxicity. This represents 100% success in providing agents that are highly effective and specific in the treatment of bronchoconstriction and/or inflammation. This invention is broadly applicable in the same manner to all gene(s) and corresponding mRNAs encoding proteins involved in or associated with airway diseases. A comparison of the phosphodiester and a version of the same oligonucleotide wherein the phosphodiester bonds are substituted with phosphorothioate bonds evidenced an unexpected superiority for the phosphorothioate oligonucleotide over the phosphodiester anti-sense oligo. The foregoing examples are illustrative of the present invention, and are not to be construed as limiting thereof. The invention is defined by the following claims, with equivalents of the claims to be included therein.



## SEQUENCE LISTING

## (1) GENERAL INFORMATION

- (i) APPLICANT: East Carolina University et al.  
(ii) TITLE OF THE INVENTION: LOW ADENOSINE OLIGONUCLEOTIDE AGENT, COMPOSITION, KIT & TREATMENTS  
(iii) NUMBER OF SEQUENCES:  
(iv) CORRESPONDENCE ADDRESS:  
(A) ADDRESSEE: ARTER & HADDEN  
(B) STREET: 725 South Figueroa St, # 2400  
(C) CITY: Los Angeles  
(D) STATE: CA  
(E) COUNTRY: USA  
(F) ZIP: 90071  
(v) COMPUTER READABLE FORM:  
(A) MEDIUM TYPE: Diskette  
(B) COMPUTER: IBM Compatible  
(C) OPERATING SYSTEM: DOS  
(D) SOFTWARE: FastSEQ for Windows Version 2.0  
(vi) CURRENT APPLICATION DATA:  
(A) APPLICATION NUMBER: PCT/US99/  
(B) FILING DATE: 3-AUG-1999  
(C) CLASSIFICATION: UNKNOWN  
(vii) PRIOR APPLICATION DATA:  
(A) APPLICATION NUMBER: 60/095,212  
(B) FILING DATE: 03-AUG-1998  
(viii) ATTORNEY/AGENT INFORMATION:  
(A) NAME: Amzel, Viviana  
(B) REGISTRATION NUMBER: 30,930  
(C) REFERENCE/DOCKET NUMBER: EPI-109  
(ix) TELECOMMUNICATION INFORMATION:  
(A) TELEPHONE: 213-430-3520  
(B) TELEFAX: 213-617-9255  
(C) TELEX:

## (2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GATGGAGGGC GGCATGGCGG G

21

## (2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

GTAGCAGGCG GGGATGGGGG C

21

## (2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GTTGTTGGGC ATCTTGCC

18

## (2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

GTACTTGCGG ATCTAGGC

18

- (2) INFORMATION FOR SEQ ID NO:5:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:  
GTGGGCCTAG CTCTCGCC 18
- (2) INFORMATION FOR SEQ ID NO:6:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:  
GTCGGGTAC CTGTCGGC 18
- (2) INFORMATION FOR SEQ ID NO:7:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:  
CTCGTCGCGG TCGCCGGCGG G 21
- (2) INFORMATION FOR SEQ ID NO:8:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:  
GGGTGGTGCT ATTGTCGGGC 20
- (2) INFORMATION FOR SEQ ID NO:9:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:  
GGCCAGGGC CAGCC 15
- (2) INFORMATION FOR SEQ ID NO:10:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:  
GGCCGGGCCA GCCGGGCCG G 21
- (2) INFORMATION FOR SEQ ID NO:11:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 50 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:  
GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCTGGGC 50
- (2) INFORMATION FOR SEQ ID NO:12:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 49 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single

(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:  
CGGCCTGGAA AGCTGAGATG GAGGCGGCA TGGCGGGCAC AGGCTGGGC 49

(2) INFORMATION FOR SEQ ID NO:13:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 48 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:  
GGCCTGGAAA GCTGAGATGG AGGCGGGCAT GCGGGGCACA GGCTGGGC 48

(2) INFORMATION FOR SEQ ID NO:14:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 47 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:  
GCCTGGAAAG CTGAGATGGA GGGCGGCATG GCGGGCACAG GCTGGGC 47

(2) INFORMATION FOR SEQ ID NO:15:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 46 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG CCGGCACAGG CTGGGC 46

(2) INFORMATION FOR SEQ ID NO:16:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 45 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:  
CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGCACAGGC TGGGC 45

(2) INFORMATION FOR SEQ ID NO:17:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 44 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:  
TGGAAGCTG AGATGGAGGG CCGCATGGCG GGCACAGGCT GGGC 44

(2) INFORMATION FOR SEQ ID NO:18:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 43 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:  
GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCACAGGCTG GGC 43

(2) INFORMATION FOR SEQ ID NO:19:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 42 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACAGGCTGG GC 42

- (2) INFORMATION FOR SEQ ID NO:20:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCTGGG C 41
- (2) INFORMATION FOR SEQ ID NO:21:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:  
AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCTGGGC 40
- (2) INFORMATION FOR SEQ ID NO:22:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:  
AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCTGGGC 39
- (2) INFORMATION FOR SEQ ID NO:23:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:  
GCTGAGATGG AGGGCGGCAT GCGGGGCACA GGCTGGGC 38
- (2) INFORMATION FOR SEQ ID NO:24:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:  
CTGAGATGGA GGGCGGCATG GCGGGCACAG GCTGGGC 37
- (2) INFORMATION FOR SEQ ID NO:25:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:  
TGAGATGGAG GCGGCATGG CGGGCACAGG CTGGGC 36
- (2) INFORMATION FOR SEQ ID NO:26:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:  
GAGATGGAGG GCGGCATGGC GGGCACAGGC TGGGC 35
- (2) INFORMATION FOR SEQ ID NO:27:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single

(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:  
AGATGGAGGG CGGCATGGCG GGCACAGGCT GGGC

34

(2) INFORMATION FOR SEQ ID NO:28:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:  
GATGGAGGGC GGCATGGCGG GCACAGGCTG GGC

33

(2) INFORMATION FOR SEQ ID NO:29:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:  
ATGGAGGGCG GCATGGCGGG CACAGGCTGG GC

32

(2) INFORMATION FOR SEQ ID NO:30:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:  
TGGAGGGCGG CATGGCGGGC ACAGGCTGGG C

31

(2) INFORMATION FOR SEQ ID NO:31:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:  
GGAGGGCGGC ATGGCGGGCA CAGGCTGGGC

30

(2) INFORMATION FOR SEQ ID NO:32:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:  
GAGGCGGCA TGGCGGGCAC AGGCTGGGC

29

(2) INFORMATION FOR SEQ ID NO:33:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:  
AGGGCGGCAT GCGGGGCACA GGCTGGGC

28

(2) INFORMATION FOR SEQ ID NO:34:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:  
GGGCGGCATG GCGGGCACAG GCTGGGC

27

- (2) INFORMATION FOR SEQ ID NO:35:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucl ic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:  
GGCGGCATGG CGGGCACAGG CTGGGC 26
- (2) INFORMATION FOR SEQ ID NO:36:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:  
GCGGCATGGC GGGCACAGGC TGGGC 25
- (2) INFORMATION FOR SEQ ID NO:37:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:  
CGGCATGGCG GGCACAGGCT GGGC 24
- (2) INFORMATION FOR SEQ ID NO:38:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:  
GGCATGGCGG GCACAGGCTG GGC 23
- (2) INFORMATION FOR SEQ ID NO:39:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:  
GCATGGCGGG CACAGGCTGG GC 22
- (2) INFORMATION FOR SEQ ID NO:40:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:  
CATGGCGGGC ACAGGCTGGG C 21
- (2) INFORMATION FOR SEQ ID NO:41:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:  
ATGGCGGGCA CAGGCTGGGC 20
- (2) INFORMATION FOR SEQ ID NO:42:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid



(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:  
TGGCGGGCAC AGGCTGGGC 19

(2) INFORMATION FOR SEQ ID NO:43:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:  
GGCGGGCACA GGCTGGGC 18

(2) INFORMATION FOR SEQ ID NO:44:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:  
GCGGGCACAG GCTGGGC 17

(2) INFORMATION FOR SEQ ID NO:45:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:  
CGGGCACAGG CTGGGC 16

(2) INFORMATION FOR SEQ ID NO:46:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:  
GGGCACAGGC TGGGC 15

(2) INFORMATION FOR SEQ ID NO:47:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:  
GGCACAGGCT GGGC 14

(2) INFORMATION FOR SEQ ID NO:48:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:  
GCACAGGCTG GGC 13

(2) INFORMATION FOR SEQ ID NO:49:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:  
CACAGGCTGG GC 12

- (2) INFORMATION FOR SEQ ID NO:50:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 11 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:  
ACAGGCTGGG C 11
- (2) INFORMATION FOR SEQ ID NO:51:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 10 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:  
CAGGCTGGGC 10
- (2) INFORMATION FOR SEQ ID NO:52:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 9 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:  
AGGCTGGGC 9
- (2) INFORMATION FOR SEQ ID NO:53:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 51 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCTGGG C 51
- (2) INFORMATION FOR SEQ ID NO:54:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 50 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCTGGG 50
- (2) INFORMATION FOR SEQ ID NO:55:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 49 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCTGG 49
- (2) INFORMATION FOR SEQ ID NO:56:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 48 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCTG 48
- (2) INFORMATION FOR SEQ ID NO:57:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 47 base pairs  
    (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCT

47

(2) INFORMATION FOR SEQ ID NO:58:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 46 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGC

46

(2) INFORMATION FOR SEQ ID NO:59:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 45 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGG

45

(2) INFORMATION FOR SEQ ID NO:60:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 44 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAG

44

(2) INFORMATION FOR SEQ ID NO:61:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 43 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACA

43

(2) INFORMATION FOR SEQ ID NO:62:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 42 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC AC

42

(2) INFORMATION FOR SEQ ID NO:63:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC A

41

(2) INFORMATION FOR SEQ ID NO:64:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGGGC

40

(2) INFORMATION FOR SEQ ID NO:65:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGG

39

(2) INFORMATION FOR SEQ ID NO:66:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCGG

38

(2) INFORMATION FOR SEQ ID NO:67:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGCG

37

(2) INFORMATION FOR SEQ ID NO:68:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGGC

36

(2) INFORMATION FOR SEQ ID NO:69:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATGG

35

(2) INFORMATION FOR SEQ ID NO:70:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CATG

34

(2) INFORMATION FOR SEQ ID NO:71:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CAT

33

(2) INFORMATION FOR SEQ ID NO:72:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid

EPI-109

276

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG CA 32

(2) INFORMATION FOR SEQ ID NO:73:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG C 31

(2) INFORMATION FOR SEQ ID NO:74:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCGG 30

(2) INFORMATION FOR SEQ ID NO:75:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGCG 29

(2) INFORMATION FOR SEQ ID NO:76:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:  
GGCGGCCTGG AAAGCTGAGA TGGAGGGC 28

(2) INFORMATION FOR SEQ ID NO:77:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:  
GGCGGCCTGG AAAGCTGAGA TGGAGGG 27

(2) INFORMATION FOR SEQ ID NO:78:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:  
GGCGGCCTGG AAAGCTGAGA TGGAGG 26

(2) INFORMATION FOR SEQ ID NO:79:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:  
GGCGGCCTGG AAAGCTGAGA TGGAG 25

- (2) INFORMATION FOR SEQ ID NO:80:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 24 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:  
GGCGGCCTGG AAAGCTGAGA TGGA 24
- (2) INFORMATION FOR SEQ ID NO:81:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 23 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:  
GGCGGCCTGG AAAGCTGAGA TGG 23
- (2) INFORMATION FOR SEQ ID NO:82:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 22 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:  
GGCGGCCTGG AAAGCTGAGA TG 22
- (2) INFORMATION FOR SEQ ID NO:83:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 21 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:  
GGCGGCCTGG AAAGCTGAGA T 21
- (2) INFORMATION FOR SEQ ID NO:84:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:  
GGCGGCCTGG AAAGCTGAGA 20
- (2) INFORMATION FOR SEQ ID NO:85:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 19 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:  
GGCGGCCTGG AAAGCTGAG 19
- (2) INFORMATION FOR SEQ ID NO:86:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 18 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:  
GGCGGCCTGG AAAGCTGA 18
- (2) INFORMATION FOR SEQ ID NO:87:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid



(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:  
GGCGGCCTGG AAAGCTG 17

(2) INFORMATION FOR SEQ ID NO:88:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:  
GGCGGCCTGG AAAGCT 16

(2) INFORMATION FOR SEQ ID NO:89:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:  
GGCGGCCTGG AAAGC 15

(2) INFORMATION FOR SEQ ID NO:90:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:  
GGCGGCCTGG AAAG 14

(2) INFORMATION FOR SEQ ID NO:91:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:  
GGCGGCCTGG AAA 13

(2) INFORMATION FOR SEQ ID NO:92:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:  
GGCGGCCTGG AA 12

(2) INFORMATION FOR SEQ ID NO:93:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:  
GGCGGCCTGG A 11

(2) INFORMATION FOR SEQ ID NO:94:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:  
GGCGGCCTGG 10

## (2) INFORMATION FOR SEQ ID NO:95:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 50 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCTGGGC

50

## (2) INFORMATION FOR SEQ ID NO:96:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 49 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCTGGG

49

## (2) INFORMATION FOR SEQ ID NO:97:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 48 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCTGG

48

## (2) INFORMATION FOR SEQ ID NO:98:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 47 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCTG

47

## (2) INFORMATION FOR SEQ ID NO:99:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 46 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCT

46

## (2) INFORMATION FOR SEQ ID NO:100:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 45 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGC

45

## (2) INFORMATION FOR SEQ ID NO:101:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGG

44

## (2) INFORMATION FOR SEQ ID NO:102:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 43 base pairs
- (B) TYPE: nucleic acid

EPI-109

280

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:  
GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAG 43

(2) INFORMATION FOR SEQ ID NO:103:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 42 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:  
GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CA 42

(2) INFORMATION FOR SEQ ID NO:104:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:  
GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA C 41

(2) INFORMATION FOR SEQ ID NO:105:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:  
GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA 40

(2) INFORMATION FOR SEQ ID NO:106:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:  
GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGGC 39

(2) INFORMATION FOR SEQ ID NO:107:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:  
GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGGG 38

(2) INFORMATION FOR SEQ ID NO:108:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:  
GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCGG 37

(2) INFORMATION FOR SEQ ID NO:109:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:  
GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGCG 36

## (2) INFORMATION FOR SEQ ID NO:110:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 35 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGGC

35

## (2) INFORMATION FOR SEQ ID NO:111:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATGG

34

## (2) INFORMATION FOR SEQ ID NO:112:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:112:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC ATG

33

## (2) INFORMATION FOR SEQ ID NO:113:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:113:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC AT

32

## (2) INFORMATION FOR SEQ ID NO:114:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:114:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC A

31

## (2) INFORMATION FOR SEQ ID NO:115:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:115:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGGC

30

## (2) INFORMATION FOR SEQ ID NO:116:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:116:

GCGGCCTGGA AAGCTGAGAT GGAGGGCGG

29

## (2) INFORMATION FOR SEQ ID NO:117:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:117:  
GCGGCCTGGA AAGCTGAGAT GGAGGGCG 28

(2) INFORMATION FOR SEQ ID NO:118:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:118:  
GCGGCCTGGA AAGCTGAGAT GGAGGGC 27

(2) INFORMATION FOR SEQ ID NO:119:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:119:  
GCGGCCTGGA AAGCTGAGAT GGAGGG 26

(2) INFORMATION FOR SEQ ID NO:120:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:  
GCGGCCTGGA AAGCTGAGAT GGAGG 25

(2) INFORMATION FOR SEQ ID NO:121:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:  
GCGGCCTGGA AAGCTGAGAT GGAG 24

(2) INFORMATION FOR SEQ ID NO:122:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:  
GCGGCCTGGA AAGCTGAGAT GGA 23

(2) INFORMATION FOR SEQ ID NO:123:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:  
GCGGCCTGGA AAGCTGAGAT GG 22

(2) INFORMATION FOR SEQ ID NO:124:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:  
GCGGCCTGGA AAGCTGAGAT G 21

- (2) INFORMATION FOR SEQ ID NO:125:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:125:  
GCGGCCTGGA AAGCTGAGAT 20
- (2) INFORMATION FOR SEQ ID NO:126:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 19 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:126:  
GCGGCCTGGA AAGCTGAGA 19
- (2) INFORMATION FOR SEQ ID NO:127:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 18 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:127:  
GCGGCCTGGA AAGCTGAG 18
- (2) INFORMATION FOR SEQ ID NO:128:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:128:  
GCGGCCTGGA AAGCTGA 17
- (2) INFORMATION FOR SEQ ID NO:129:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 16 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:129:  
GCGGCCTGGA AAGCTG 16
- (2) INFORMATION FOR SEQ ID NO:130:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 15 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:130:  
GCGGCCTGGA AAGCT 15
- (2) INFORMATION FOR SEQ ID NO:131:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:131:  
GCGGCCTGGA AAGC 14
- (2) INFORMATION FOR SEQ ID NO:132:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 13 base pairs  
    (B) TYPE: nucleic acid



(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:132:  
GCGGCCTGGA AAG 13

(2) INFORMATION FOR SEQ ID NO:133:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:133:  
GCGGCCTGGA AA 12

(2) INFORMATION FOR SEQ ID NO:134:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:134:  
GCGGCCTGGA A 11

(2) INFORMATION FOR SEQ ID NO:135:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:135:  
GCGGCCTGGA 10

(2) INFORMATION FOR SEQ ID NO:136:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 49 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:136:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCTGGG 49

(2) INFORMATION FOR SEQ ID NO:137:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 48 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:137:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCTGGG 48

(2) INFORMATION FOR SEQ ID NO:138:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 47 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:138:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCTGG 47

(2) INFORMATION FOR SEQ ID NO:139:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 46 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:139:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCTG 46

## (2) INFORMATION FOR SEQ ID NO:140:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 45 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:140:

CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCT

45

## (2) INFORMATION FOR SEQ ID NO:141:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:141:

CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGC

44

## (2) INFORMATION FOR SEQ ID NO:142:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 43 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:142:

CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGG

43

## (2) INFORMATION FOR SEQ ID NO:143:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:143:

CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AG

42

## (2) INFORMATION FOR SEQ ID NO:144:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 41 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:144:

CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC A

41

## (2) INFORMATION FOR SEQ ID NO:145:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 40 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:145:

CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC

40

## (2) INFORMATION FOR SEQ ID NO:146:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:146:

CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGCAC

39

## (2) INFORMATION FOR SEQ ID NO:147:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 38 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:147:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGGC 38

(2) INFORMATION FOR SEQ ID NO:148:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:148:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGGG 37

(2) INFORMATION FOR SEQ ID NO:149:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:149:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCGG 36

(2) INFORMATION FOR SEQ ID NO:150:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:150:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGCG 35

(2) INFORMATION FOR SEQ ID NO:151:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:151:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGGC 34

(2) INFORMATION FOR SEQ ID NO:152:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:152:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TGG 33

(2) INFORMATION FOR SEQ ID NO:153:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:153:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA TG 32

(2) INFORMATION FOR SEQ ID NO:154:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:154:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA T 31

- (2) INFORMATION FOR SEQ ID NO:155:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 30 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:155:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGCA 30
- (2) INFORMATION FOR SEQ ID NO:156:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 29 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:156:  
CGGCCTGGAA AGCTGAGATG GAGGGCGGC 29
- (2) INFORMATION FOR SEQ ID NO:157:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 28 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:157:  
CGGCCTGGAA AGCTGAGATG GAGGGCGG 28
- (2) INFORMATION FOR SEQ ID NO:158:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 27 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:158:  
CGGCCTGGAA AGCTGAGATG GAGGGCG 27
- (2) INFORMATION FOR SEQ ID NO:159:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 26 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:159:  
CGGCCTGGAA AGCTGAGATG GAGGGC 26
- (2) INFORMATION FOR SEQ ID NO:160:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 25 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:160:  
CGGCCTGGAA AGCTGAGATG GAGGG 25
- (2) INFORMATION FOR SEQ ID NO:161:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 24 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:161:  
CGGCCTGGAA AGCTGAGATG GAGG 24
- (2) INFORMATION FOR SEQ ID NO:162:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 23 base pairs  
    (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:162:  
CGGCCTGGAA AGCTGAGATG GAG 23

(2) INFORMATION FOR SEQ ID NO:163:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:163:  
CGGCCTGGAA AGCTGAGATG GA 22

(2) INFORMATION FOR SEQ ID NO:164:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:164:  
CGGCCTGGAA AGCTGAGATG G 21

(2) INFORMATION FOR SEQ ID NO:165:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:165:  
CGGCCTGGAA AGCTGAGATG 20

(2) INFORMATION FOR SEQ ID NO:166:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:166:  
CGGCCTGGAA AGCTGAGAT 19

(2) INFORMATION FOR SEQ ID NO:167:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:167:  
CGGCCTGGAA AGCTGAGA 18

(2) INFORMATION FOR SEQ ID NO:168:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:168:  
CGGCCTGGAA AGCTGAG 17

(2) INFORMATION FOR SEQ ID NO:169:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:169:  
CGGCCTGGAA AGCTGA 16

- (2) INFORMATION FOR SEQ ID NO:170:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 15 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:170:  
CGGCCTGGAA AGCTG 15
- (2) INFORMATION FOR SEQ ID NO:171:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:171:  
CGGCCTGGAA AGCT 14
- (2) INFORMATION FOR SEQ ID NO:172:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 13 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:172:  
CGGCCTGGAA AGC 13
- (2) INFORMATION FOR SEQ ID NO:173:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 12 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:173:  
CGGCCTGGAA AG 12
- (2) INFORMATION FOR SEQ ID NO:174:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 11 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:174:  
CGGCCTGGAA A 11
- (2) INFORMATION FOR SEQ ID NO:175:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 10 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:175:  
CGGCCTGGAA 10
- (2) INFORMATION FOR SEQ ID NO:176:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 48 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:176:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCACA GGCTGGGC 48
- (2) INFORMATION FOR SEQ ID NO:177:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 47 base pairs  
    (B) TYPE: nucleic acid



(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:177:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCACA GGCTGGG 47

(2) INFORMATION FOR SEQ ID NO:178:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 46 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:178:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCACA GGCTGG 46

(2) INFORMATION FOR SEQ ID NO:179:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 45 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:179:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCACA GGCTG 45

(2) INFORMATION FOR SEQ ID NO:180:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 44 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:180:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCACA GGCT 44

(2) INFORMATION FOR SEQ ID NO:181:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 43 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:181:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCACA GGC 43

(2) INFORMATION FOR SEQ ID NO:182:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 42 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:182:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCACA GG 42

(2) INFORMATION FOR SEQ ID NO:183:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:183:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCACA G 41

(2) INFORMATION FOR SEQ ID NO:184:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:184:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCACA 40

- (2) INFORMATION FOR SEQ ID NO:185:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:185:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCAC 39
- (2) INFORMATION FOR SEQ ID NO:186:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:186:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGGCA 38
- (2) INFORMATION FOR SEQ ID NO:187:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:187:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGGG 37
- (2) INFORMATION FOR SEQ ID NO:188:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:188:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGGG 36
- (2) INFORMATION FOR SEQ ID NO:189:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:189:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCGG 35
- (2) INFORMATION FOR SEQ ID NO:190:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:190:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GCG 34
- (2) INFORMATION FOR SEQ ID NO:191:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:191:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GGC 33
- (2) INFORMATION FOR SEQ ID NO:192:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:192:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT GG 32

(2) INFORMATION FOR SEQ ID NO:193:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:193:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT G 31

(2) INFORMATION FOR SEQ ID NO:194:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:194:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCAT 30

(2) INFORMATION FOR SEQ ID NO:195:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:195:  
GGCCTGGAAA GCTGAGATGG AGGGCGGCA 29

(2) INFORMATION FOR SEQ ID NO:196:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:196:  
GGCCTGGAAA GCTGAGATGG AGGGCGGC 28

(2) INFORMATION FOR SEQ ID NO:197:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:197:  
GGCCTGGAAA GCTGAGATGG AGGGCGG 27

(2) INFORMATION FOR SEQ ID NO:198:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:198:  
GGCCTGGAAA GCTGAGATGG AGGGCG 26

(2) INFORMATION FOR SEQ ID NO:199:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:199:  
GGCCTGGAAA GCTGAGATGG AGGGC 25

- (2) INFORMATION FOR SEQ ID NO:200:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 24 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:200:  
GGCCTGGAAA GCTGAGATGG AGGG 24
- (2) INFORMATION FOR SEQ ID NO:201:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 23 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:201:  
GGCCTGGAAA GCTGAGATGG AGG 23
- (2) INFORMATION FOR SEQ ID NO:202:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 22 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:202:  
GGCCTGGAAA GCTGAGATGG AG 22
- (2) INFORMATION FOR SEQ ID NO:203:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 21 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:203:  
GGCCTGGAAA GCTGAGATGG A 21
- (2) INFORMATION FOR SEQ ID NO:204:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:204:  
GGCCTGGAAA GCTGAGATGG 20
- (2) INFORMATION FOR SEQ ID NO:205:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 19 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:205:  
GGCCTGGAAA GCTGAGATG 19
- (2) INFORMATION FOR SEQ ID NO:206:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 18 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:206:  
GGCCTGGAAA GCTGAGAT 18
- (2) INFORMATION FOR SEQ ID NO:207:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:207:  
GGCCTGGAAA GCTGAGA 17

(2) INFORMATION FOR SEQ ID NO:208:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:208:  
GGCCTGGAAA GCTGAG 16

(2) INFORMATION FOR SEQ ID NO:209:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:209:  
GGCCTGGAAA GCTGA 15

(2) INFORMATION FOR SEQ ID NO:210:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:210:  
GGCCTGGAAA GCTG 14

(2) INFORMATION FOR SEQ ID NO:211:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:211:  
GGCCTGGAAA GCT 13

(2) INFORMATION FOR SEQ ID NO:212:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:212:  
GGCCTGGAAA GC 12

(2) INFORMATION FOR SEQ ID NO:213:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:213:  
GGCCTGGAAA G 11

(2) INFORMATION FOR SEQ ID NO:214:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:214:  
GGCCTGGAAA 10

## (2) INFORMATION FOR SEQ ID NO:215:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 47 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:215:

GCCTGGAAG CTGAGATGGA GGGCGGCATG GCGGGCACAG GCTGGGC

47

## (2) INFORMATION FOR SEQ ID NO:216:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 46 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:216:

GCCTGGAAG CTGAGATGGA GGGCGGCATG GCGGGCACAG GCTGGG

46

## (2) INFORMATION FOR SEQ ID NO:217:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 45 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:217:

GCCTGGAAG CTGAGATGGA GGGCGGCATG GCGGGCACAG GCTGG

45

## (2) INFORMATION FOR SEQ ID NO:218:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:218:

GCCTGGAAG CTGAGATGGA GGGCGGCATG GCGGGCACAG GCTG

44

## (2) INFORMATION FOR SEQ ID NO:219:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 43 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:219:

GCCTGGAAG CTGAGATGGA GGGCGGCATG GCGGGCACAG GCT

43

## (2) INFORMATION FOR SEQ ID NO:220:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:220:

GCCTGGAAG CTGAGATGGA GGGCGGCATG GCGGGCACAG GC

42

## (2) INFORMATION FOR SEQ ID NO:221:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 41 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:221:

GCCTGGAAG CTGAGATGGA GGGCGGCATG GCGGGCACAG G

41

## (2) INFORMATION FOR SEQ ID NO:222:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 40 base pairs
- (B) TYPE: nucleic acid



(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:222:  
GCCTGGAAAG CTGAGATGGA GGGCGGCATG GCGGGCACAG 40

(2) INFORMATION FOR SEQ ID NO:223:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:223:  
GCCTGGAAAG CTGAGATGGA GGGCGGCATG GCGGGCAC 39

(2) INFORMATION FOR SEQ ID NO:224:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:224:  
GCCTGGAAAG CTGAGATGGA GGGCGGCATG GCGGGCAC 38

(2) INFORMATION FOR SEQ ID NO:225:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:225:  
GCCTGGAAAG CTGAGATGGA GGGCGGCATG GCGGGCA 37

(2) INFORMATION FOR SEQ ID NO:226:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:226:  
GCCTGGAAAG CTGAGATGGA GGGCGGCATG GCGGGC 36

(2) INFORMATION FOR SEQ ID NO:227:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:227:  
GCCTGGAAAG CTGAGATGGA GGGCGGCATG GCGGG 35

(2) INFORMATION FOR SEQ ID NO:228:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:228:  
GCCTGGAAAG CTGAGATGGA GGGCGGCATG GCGG 34

(2) INFORMATION FOR SEQ ID NO:229:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:229:  
GCCTGGAAAG CTGAGATGGA GGGCGGCATG GCG 33

## (2) INFORMATION FOR SEQ ID NO:230:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:230:

GCCTGGAAG CTGAGATGGA GGGCGCATG GC

32

## (2) INFORMATION FOR SEQ ID NO:231:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:231:

GCCTGGAAG CTGAGATGGA GGGCGCATG G

31

## (2) INFORMATION FOR SEQ ID NO:232:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:232:

GCCTGGAAG CTGAGATGGA GGGCGCATG

30

## (2) INFORMATION FOR SEQ ID NO:233:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:233:

GCCTGGAAG CTGAGATGGA GGGCGCAT

29

## (2) INFORMATION FOR SEQ ID NO:234:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:234:

GCCTGGAAG CTGAGATGGA GGGCGGCA

28

## (2) INFORMATION FOR SEQ ID NO:235:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:235:

GCCTGGAAG CTGAGATGGA GGGCGGC

27

## (2) INFORMATION FOR SEQ ID NO:236:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:236:

GCCTGGAAG CTGAGATGGA GGGCGG

26

## (2) INFORMATION FOR SEQ ID NO:237:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:237:  
GCCTGGAAAG CTGAGATGGA GGGCG 25

(2) INFORMATION FOR SEQ ID NO:238:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:238:  
GCCTGGAAAG CTGAGATGGA GGGC 24

(2) INFORMATION FOR SEQ ID NO:239:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:239:  
GCCTGGAAAG CTGAGATGGA GGG 23

(2) INFORMATION FOR SEQ ID NO:240:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:240:  
GCCTGGAAAG CTGAGATGGA GG 22

(2) INFORMATION FOR SEQ ID NO:241:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:241:  
GCCTGGAAAG CTGAGATGGA G 21

(2) INFORMATION FOR SEQ ID NO:242:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:242:  
GCCTGGAAAG CTGAGATGGA 20

(2) INFORMATION FOR SEQ ID NO:243:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:243:  
GCCTGGAAAG CTGAGATGG 19

(2) INFORMATION FOR SEQ ID NO:244:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:244:  
GCCTGGAAAG CTGAGATG 18

- (2) INFORMATION FOR SEQ ID NO:245:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:245:  
GCCTGGAAAG CTGAGAT 17
- (2) INFORMATION FOR SEQ ID NO:246:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 16 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:246:  
GCCTGGAAAG CTGAGA 16
- (2) INFORMATION FOR SEQ ID NO:247:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 15 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:247:  
GCCTGGAAAG CTGAG 15
- (2) INFORMATION FOR SEQ ID NO:248:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:248:  
GCCTGGAAAG CTGA 14
- (2) INFORMATION FOR SEQ ID NO:249:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 13 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:249:  
GCCTGGAAAG CTG 13
- (2) INFORMATION FOR SEQ ID NO:250:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 12 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:250:  
GCCTGGAAAG CT 12
- (2) INFORMATION FOR SEQ ID NO:251:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 11 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:251:  
GCCTGGAAAG C 11
- (2) INFORMATION FOR SEQ ID NO:252:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 10 base pairs  
    (B) TYPE: nucleic acid

EPI-109

300

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:252:  
GCCTGGAAAG

10

(2) INFORMATION FOR SEQ ID NO:253:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 46 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:253:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCACAGG CTGGGC

46

(2) INFORMATION FOR SEQ ID NO:254:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 45 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:254:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCACAGG CTGGG

45

(2) INFORMATION FOR SEQ ID NO:255:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 44 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:255:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCACAGG CTGG

44

(2) INFORMATION FOR SEQ ID NO:256:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 43 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:256:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCACAGG CTG

43

(2) INFORMATION FOR SEQ ID NO:257:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 42 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:257:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCACAGG CT

42

(2) INFORMATION FOR SEQ ID NO:258:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:258:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCACAGG C

41

(2) INFORMATION FOR SEQ ID NO:259:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:259:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCACAGG

40

## (2) INFORMATION FOR SEQ ID NO:260:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:260:

CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCACAG

39

## (2) INFORMATION FOR SEQ ID NO:261:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 38 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:261:

CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCACA

38

## (2) INFORMATION FOR SEQ ID NO:262:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 37 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:262:

CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCAC

37

## (2) INFORMATION FOR SEQ ID NO:263:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:263:

CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGCA

36

## (2) INFORMATION FOR SEQ ID NO:264:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 35 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:264:

CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGGC

35

## (2) INFORMATION FOR SEQ ID NO:265:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:265:

CCTGGAAAGC TGAGATGGAG GCGGCATGG CGGG

34

## (2) INFORMATION FOR SEQ ID NO:266:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:266:

CCTGGAAAGC TGAGATGGAG GCGGCATGG CGG

33

## (2) INFORMATION FOR SEQ ID NO:267:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid

EPI-109

302

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:267:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG CG

32

(2) INFORMATION FOR SEQ ID NO:268:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:268:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG C

31

(2) INFORMATION FOR SEQ ID NO:269:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:269:  
CCTGGAAAGC TGAGATGGAG GCGGCATGG

30

(2) INFORMATION FOR SEQ ID NO:270:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:270:  
CCTGGAAAGC TGAGATGGAG GCGGCATG

29

(2) INFORMATION FOR SEQ ID NO:271:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:271:  
CCTGGAAAGC TGAGATGGAG GCGGCAT

28

(2) INFORMATION FOR SEQ ID NO:272:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:272:  
CCTGGAAAGC TGAGATGGAG GCGGCA

27

(2) INFORMATION FOR SEQ ID NO:273:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:273:  
CCTGGAAAGC TGAGATGGAG GCGGC

26

(2) INFORMATION FOR SEQ ID NO:274:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:274:  
CCTGGAAAGC TGAGATGGAG GCGG

25



- (2) INFORMATION FOR SEQ ID NO:275:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 24 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:275:  
CCTGGAAAGC TGAGATGGAG GGCG 24
- (2) INFORMATION FOR SEQ ID NO:276:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 23 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:276:  
CCTGGAAAGC TGAGATGGAG GGC 23
- (2) INFORMATION FOR SEQ ID NO:277:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 22 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:277:  
CCTGGAAAGC TGAGATGGAG GG 22
- (2) INFORMATION FOR SEQ ID NO:278:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 21 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:278:  
CCTGGAAAGC TGAGATGGAG G 21
- (2) INFORMATION FOR SEQ ID NO:279:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:279:  
CCTGGAAAGC TGAGATGGAG 20
- (2) INFORMATION FOR SEQ ID NO:280:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 19 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:280:  
CCTGGAAAGC TGAGATGGA 19
- (2) INFORMATION FOR SEQ ID NO:281:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 18 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:281:  
CCTGGAAAGC TGAGATGG 18
- (2) INFORMATION FOR SEQ ID NO:282:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:282:  
CCTGGAAAGC TGAGATG 17

(2) INFORMATION FOR SEQ ID NO:283:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:283:  
CCTGGAAAGC TGAGAT 16

(2) INFORMATION FOR SEQ ID NO:284:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:284:  
CCTGGAAAGC TGAGA 15

(2) INFORMATION FOR SEQ ID NO:285:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:285:  
CCTGGAAAGC TGAG 14

(2) INFORMATION FOR SEQ ID NO:286:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:286:  
CCTGGAAAGC TGA 13

(2) INFORMATION FOR SEQ ID NO:287:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:287:  
CCTGGAAAGC TG 12

(2) INFORMATION FOR SEQ ID NO:288:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:288:  
CCTGGAAAGC T 11

(2) INFORMATION FOR SEQ ID NO:289:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:289:  
CCTGGAAAGC 10

## (2) INFORMATION FOR SEQ ID NO:290:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 45 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:290:

CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCACAGGC TGGGC

45

## (2) INFORMATION FOR SEQ ID NO:291:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 44 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:291:

CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCACAGGC TGGG

44

## (2) INFORMATION FOR SEQ ID NO:292:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 43 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:292:

CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCACAGGC TGG

43

## (2) INFORMATION FOR SEQ ID NO:293:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:293:

CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCACAGGC TG

42

## (2) INFORMATION FOR SEQ ID NO:294:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 41 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:294:

CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCACAGGC T

41

## (2) INFORMATION FOR SEQ ID NO:295:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 40 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:295:

CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCACAGGC

40

## (2) INFORMATION FOR SEQ ID NO:296:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: cDNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:296:

CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCACAGG

39

## (2) INFORMATION FOR SEQ ID NO:297:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 38 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

- (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:297:  
CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCACAG 38
- (2) INFORMATION FOR SEQ ID NO:298:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:298:  
CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCACA 37
- (2) INFORMATION FOR SEQ ID NO:299:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:299:  
CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCAC 36
- (2) INFORMATION FOR SEQ ID NO:300:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:300:  
CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGCA 35
- (2) INFORMATION FOR SEQ ID NO:301:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:301:  
CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGGC 34
- (2) INFORMATION FOR SEQ ID NO:302:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:302:  
CTGGAAAGCT GAGATGGAGG GCGGCATGGC GGG 33
- (2) INFORMATION FOR SEQ ID NO:303:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:303:  
CTGGAAAGCT GAGATGGAGG GCGGCATGGC GG 32
- (2) INFORMATION FOR SEQ ID NO:304:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:304:  
CTGGAAAGCT GAGATGGAGG GCGGCATGGC G 31
- (2) INFORMATION FOR SEQ ID NO:305:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid

EPI-109

307

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:305:  
CTGGAAAGCT GAGATGGAGG GCGGCATGGC 30

(2) INFORMATION FOR SEQ ID NO:306:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:306:  
CTGGAAAGCT GAGATGGAGG GCGGCATGG 29

(2) INFORMATION FOR SEQ ID NO:307:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:307:  
CTGGAAAGCT GAGATGGAGG GCGGCATG 28

(2) INFORMATION FOR SEQ ID NO:308:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:308:  
CTGGAAAGCT GAGATGGAGG GCGGCAT 27

(2) INFORMATION FOR SEQ ID NO:309:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:309:  
CTGGAAAGCT GAGATGGAGG GCGGCA 26

(2) INFORMATION FOR SEQ ID NO:310:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:310:  
CTGGAAAGCT GAGATGGAGG GCGGC 25

(2) INFORMATION FOR SEQ ID NO:311:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:311:  
CTGGAAAGCT GAGATGGAGG GCGG 24

(2) INFORMATION FOR SEQ ID NO:312:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:312:  
CTGGAAAGCT GAGATGGAGG GCG 23

(2) INFORMATION FOR SEQ ID NO:313:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:313:

EPI-109

308

CTGGAAAGCT GAGATGGAGG GC

22

(2) INFORMATION FOR SEQ ID NO:314:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:314:

CTGGAAAGCT GAGATGGAGG G

21

(2) INFORMATION FOR SEQ ID NO:315:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:315:

CTGGAAAGCT GAGATGGAGG

20

(2) INFORMATION FOR SEQ ID NO:316:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:316:

CTGGAAAGCT GAGATGGAG

19

(2) INFORMATION FOR SEQ ID NO:317:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:317:

CTGGAAAGCT GAGATGGA

18

(2) INFORMATION FOR SEQ ID NO:318:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:318:

CTGGAAAGCT GAGATGG

17

(2) INFORMATION FOR SEQ ID NO:319:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 16 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:319:

CTGGAAAGCT GAGATG

16

(2) INFORMATION FOR SEQ ID NO:320:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:320:

CTGGAAAGCT GAGAT

15

(2) INFORMATION FOR SEQ ID NO:321:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:321:

CTGGAAAGCT GAGA

14

(2) INFORMATION FOR SEQ ID NO:322:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:322:  
CTGGAAAGCT GAG 13

(2) INFORMATION FOR SEQ ID NO:323:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:323:  
CTGGAAAGCT GA 12

(2) INFORMATION FOR SEQ ID NO:324:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:324:  
CTGGAAAGCT G 11

(2) INFORMATION FOR SEQ ID NO:325:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:325:  
CTGGAAAGCT 10

(2) INFORMATION FOR SEQ ID NO:326:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 44 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:326:  
TGGAAGCTG AGATGGAGGG CGGCATGGCG GGCACAGGCT GGGC 44

(2) INFORMATION FOR SEQ ID NO:327:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 43 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:327:  
TGGAAGCTG AGATGGAGGG CGGCATGGCG GGCACAGGCT GGG 43

(2) INFORMATION FOR SEQ ID NO:328:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 42 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:328:  
TGGAAGCTG AGATGGAGGG CGGCATGGCG GGCACAGGCT GG 42

(2) INFORMATION FOR SEQ ID NO:329:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:329:  
TGGAAGCTG AGATGGAGGG CGGCATGGCG GGCACAGGCT G 41

(2) INFORMATION FOR SEQ ID NO:330:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 base pairs  
(B) TYPE: nucleic acid



EPI-109

310

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:330:  
TGGAAAGCTG AGATGGAGGG CGGCATGGCG GGCACAGGCT 40

(2) INFORMATION FOR SEQ ID NO:331:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:331:  
TGGAAAGCTG AGATGGAGGG CGGCATGGCG GGCACAGG 39

(2) INFORMATION FOR SEQ ID NO:332:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:332:  
TGGAAAGCTG AGATGGAGGG CGGCATGGCG GGCACAGG 38

(2) INFORMATION FOR SEQ ID NO:333:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:333:  
TGGAAAGCTG AGATGGAGGG CGGCATGGCG GGCACAG 37

(2) INFORMATION FOR SEQ ID NO:334:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:334:  
TGGAAAGCTG AGATGGAGGG CGGCATGGCG GGCACA 36

(2) INFORMATION FOR SEQ ID NO:335:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:335:  
TGGAAAGCTG AGATGGAGGG CGGCATGGCG GGCAC 35

(2) INFORMATION FOR SEQ ID NO:336:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:336:  
TGGAAAGCTG AGATGGAGGG CGGCATGGCG GGCAC 34

(2) INFORMATION FOR SEQ ID NO:337:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:337:  
TGGAAAGCTG AGATGGAGGG CGGCATGGCG GGC 33

(2) INFORMATION FOR SEQ ID NO:338:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:338:

EPI-109

311

TGGAAAGCTG AGATGGAGGG CGGCATGGCG GG

32

## (2) INFORMATION FOR SEQ ID NO:339:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:339:

TGGAAAGCTG AGATGGAGGG CGGCATGGCG G

31

## (2) INFORMATION FOR SEQ ID NO:340:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 30 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:340:

TGGAAAGCTG AGATGGAGGG CGGCATGGCG

30

## (2) INFORMATION FOR SEQ ID NO:341:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 29 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:341:

TGGAAAGCTG AGATGGAGGG CGGCATGGC

29

## (2) INFORMATION FOR SEQ ID NO:342:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 28 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:342:

TGGAAAGCTG AGATGGAGGG CGGCATGG

28

## (2) INFORMATION FOR SEQ ID NO:343:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:343:

TGGAAAGCTG AGATGGAGGG CGGCATG

27

## (2) INFORMATION FOR SEQ ID NO:344:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 26 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:344:

TGGAAAGCTG AGATGGAGGG CGGCAT

26

## (2) INFORMATION FOR SEQ ID NO:345:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 25 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:345:

TGGAAAGCTG AGATGGAGGG CGGCA

25

## (2) INFORMATION FOR SEQ ID NO:346:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 24 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:346:

TGGAAAGCTG AGATGGAGGG CGGC

24

## (2) INFORMATION FOR SEQ ID NO:347:

EPI-109

312

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:347:  
TGGAAAGCTG AGATGGAGGG CGG 23
- (2) INFORMATION FOR SEQ ID NO:348:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:348:  
TGGAAAGCTG AGATGGAGGG CG 22
- (2) INFORMATION FOR SEQ ID NO:349:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:349:  
TGGAAAGCTG AGATGGAGGG C 21
- (2) INFORMATION FOR SEQ ID NO:350:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:350:  
TGGAAAGCTG AGATGGAGGG 20
- (2) INFORMATION FOR SEQ ID NO:351:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:351:  
TGGAAAGCTG AGATGGAGG 19
- (2) INFORMATION FOR SEQ ID NO:352:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:352:  
TGGAAAGCTG AGATGGAG 18
- (2) INFORMATION FOR SEQ ID NO:353:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:353:  
TGGAAAGCTG AGATGGA 17
- (2) INFORMATION FOR SEQ ID NO:354:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:354:  
TGGAAAGCTG AGATGG 16
- (2) INFORMATION FOR SEQ ID NO:355:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:355:  
TGGAAAGCTG AGATG 15

(2) INFORMATION FOR SEQ ID NO:356:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:356:  
TGGAAAGCTG AGAT 14

(2) INFORMATION FOR SEQ ID NO:357:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:357:  
TGGAAAGCTG AGA 13

(2) INFORMATION FOR SEQ ID NO:358:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:358:  
TGGAAAGCTG AG 12

(2) INFORMATION FOR SEQ ID NO:359:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:359:  
TGGAAAGCTG A 11

(2) INFORMATION FOR SEQ ID NO:360:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:360:  
TGGAAAGCTG 10

(2) INFORMATION FOR SEQ ID NO:361:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 43 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:361:  
GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCACAGGCTG GGC 43

(2) INFORMATION FOR SEQ ID NO:362:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 42 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:362:  
GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCACAGGCTG GG 42

(2) INFORMATION FOR SEQ ID NO:363:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:363:

EPI-109

314

GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCACAGGCTG G

41

## (2) INFORMATION FOR SEQ ID NO:364:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 40 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:364:

GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCACAGGCTG

40

## (2) INFORMATION FOR SEQ ID NO:365:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:365:

GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCACAGGCT

39

## (2) INFORMATION FOR SEQ ID NO:366:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 38 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:366:

GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCACAGGCT

38

## (2) INFORMATION FOR SEQ ID NO:367:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 0 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:367:

## (2) INFORMATION FOR SEQ ID NO:368:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:368:

GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCACAG

36

## (2) INFORMATION FOR SEQ ID NO:369:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 35 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:369:

GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCACA

35

## (2) INFORMATION FOR SEQ ID NO:370:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:370:

GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCAC

34

## (2) INFORMATION FOR SEQ ID NO:371:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:371:

GGAAAGCTGA GATGGAGGGC GGCATGGCGG GCA

33

## (2) INFORMATION FOR SEQ ID NO:372:

EPI-109

315

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:372:  
GGAAAGCTGA GATGGAGGGC GGCATGGCGG GC 32
- (2) INFORMATION FOR SEQ ID NO:373:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:373:  
GGAAAGCTGA GATGGAGGGC GGCATGGCGG G 31
- (2) INFORMATION FOR SEQ ID NO:374:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:374:  
GGAAAGCTGA GATGGAGGGC GGCATGGCGG 30
- (2) INFORMATION FOR SEQ ID NO:375:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:375:  
GGAAAGCTGA GATGGAGGGC GGCATGGCG 29
- (2) INFORMATION FOR SEQ ID NO:376:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:376:  
GGAAAGCTGA GATGGAGGGC GGCATGGC 28
- (2) INFORMATION FOR SEQ ID NO:377:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:377:  
GGAAAGCTGA GATGGAGGGC GGCATGG 27
- (2) INFORMATION FOR SEQ ID NO:378:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:378:  
GGAAAGCTGA GATGGAGGGC GGCATG 26
- (2) INFORMATION FOR SEQ ID NO:379:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:379:  
GGAAAGCTGA GATGGAGGGC GGCAT 25
- (2) INFORMATION FOR SEQ ID NO:380:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid

EPI-109

316

- (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:380:  
GGAAAGCTGA GATGGAGGGC GGCA 24
- (2) INFORMATION FOR SEQ ID NO:381:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:381:  
GGAAAGCTGA GATGGAGGGC GGC 23
- (2) INFORMATION FOR SEQ ID NO:382:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:382:  
GGAAAGCTGA GATGGAGGGC GG 22
- (2) INFORMATION FOR SEQ ID NO:383:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:383:  
GGAAAGCTGA GATGGAGGGC G 21
- (2) INFORMATION FOR SEQ ID NO:384:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:384:  
GGAAAGCTGA GATGGAGGGC 20
- (2) INFORMATION FOR SEQ ID NO:385:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:385:  
GGAAAGCTGA GATGGAGGG 19
- (2) INFORMATION FOR SEQ ID NO:386:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:386:  
GGAAAGCTGA GATGGAGG 18
- (2) INFORMATION FOR SEQ ID NO:387:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:387:  
GGAAAGCTGA GATGGAGG 18
- (2) INFORMATION FOR SEQ ID NO:388:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:388:



EPI-109

317

GGAAAGCTGA GATGGA

16

(2) INFORMATION FOR SEQ ID NO:389:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:389:

GGAAAGCTGA GATGG

15

(2) INFORMATION FOR SEQ ID NO:390:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:390:

GGAAAGCTGA GATG

14

(2) INFORMATION FOR SEQ ID NO:391:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:391:

GGAAAGCTGA GAT

13

(2) INFORMATION FOR SEQ ID NO:392:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:392:

GGAAAGCTGA GA

12

(2) INFORMATION FOR SEQ ID NO:393:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:393:

GGAAAGCTGA G

11

(2) INFORMATION FOR SEQ ID NO:394:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:394:

GGAAAGCTGA

10

(2) INFORMATION FOR SEQ ID NO:395:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 42 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:395:

GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACAGGCTGG GC

42

(2) INFORMATION FOR SEQ ID NO:396:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 41 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:396:

GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACAGGCTGG G

41

(2) INFORMATION FOR SEQ ID NO:397:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:397:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACAGGCTGG 40
- (2) INFORMATION FOR SEQ ID NO:398:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:398:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACAGGCTG 39
- (2) INFORMATION FOR SEQ ID NO:399:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:399:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACAGGCT 38
- (2) INFORMATION FOR SEQ ID NO:400:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:400:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACAGGC 37
- (2) INFORMATION FOR SEQ ID NO:401:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:401:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACAGG 36
- (2) INFORMATION FOR SEQ ID NO:402:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:402:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACAG 35
- (2) INFORMATION FOR SEQ ID NO:403:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:403:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACA 34
- (2) INFORMATION FOR SEQ ID NO:404:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:404:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CACA 34
- (2) INFORMATION FOR SEQ ID NO:405:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid

- (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:405:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG CA 32
- (2) INFORMATION FOR SEQ ID NO:406:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:406:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG C 31
- (2) INFORMATION FOR SEQ ID NO:407:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:407:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGGG 30
- (2) INFORMATION FOR SEQ ID NO:408:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:408:  
GAAAGCTGAG ATGGAGGGCG GCATGGCGG 29
- (2) INFORMATION FOR SEQ ID NO:409:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:409:  
GAAAGCTGAG ATGGAGGGCG GCATGGCG 28
- (2) INFORMATION FOR SEQ ID NO:410:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:410:  
GAAAGCTGAG ATGGAGGGCG GCATGGC 27
- (2) INFORMATION FOR SEQ ID NO:411:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:411:  
GAAAGCTGAG ATGGAGGGCG GCATGG 26
- (2) INFORMATION FOR SEQ ID NO:412:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:412:  
GAAAGCTGAG ATGGAGGGCG GCATG 25
- (2) INFORMATION FOR SEQ ID NO:413:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:413:

EPI-109

320

GAAAGCTGAG ATGGAGGGCG GCAT

24

(2) INFORMATION FOR SEQ ID NO:414:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 23 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:414:

GAAAGCTGAG ATGGAGGGCG GCA

23

(2) INFORMATION FOR SEQ ID NO:415:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 22 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:415:

GAAAGCTGAG ATGGAGGGCG GC

22

(2) INFORMATION FOR SEQ ID NO:416:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:416:

GAAAGCTGAG ATGGAGGGCG G

21

(2) INFORMATION FOR SEQ ID NO:417:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:417:

GAAAGCTGAG ATGGAGGGCG

20

(2) INFORMATION FOR SEQ ID NO:418:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:418:

GAAAGCTGAG ATGGAGGGC

19

(2) INFORMATION FOR SEQ ID NO:419:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:419:

GAAAGCTGAG ATGGAGGG

18

(2) INFORMATION FOR SEQ ID NO:420:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 17 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:420:

GAAAGCTGAG ATGGAGG

17

(2) INFORMATION FOR SEQ ID NO:421:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 16 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:421:

GAAAGCTGAG ATGGAG

16

(2) INFORMATION FOR SEQ ID NO:422:

EPI-109

321

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:422:  
GAAAGCTGAG ATGGA. 15
- (2) INFORMATION FOR SEQ ID NO:423:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:423:  
GAAAGCTGAG ATGG 14
- (2) INFORMATION FOR SEQ ID NO:424:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:424:  
GAAAGCTGAG ATG 13
- (2) INFORMATION FOR SEQ ID NO:425:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:425:  
GAAAGCTGAG AT 12
- (2) INFORMATION FOR SEQ ID NO:426:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:426:  
GAAAGCTGAG A 11
- (2) INFORMATION FOR SEQ ID NO:427:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:427:  
GAAAGCTGAG 10
- (2) INFORMATION FOR SEQ ID NO:428:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:428:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCTGGG C 41
- (2) INFORMATION FOR SEQ ID NO:429:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:429:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCTGGG 40
- (2) INFORMATION FOR SEQ ID NO:430:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:430:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCTGG 39

(2) INFORMATION FOR SEQ ID NO:431:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:431:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCTG 38

(2) INFORMATION FOR SEQ ID NO:432:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:432:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGCT 37

(2) INFORMATION FOR SEQ ID NO:433:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:433:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGGC 36

(2) INFORMATION FOR SEQ ID NO:434:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:434:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAGG 35

(2) INFORMATION FOR SEQ ID NO:435:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:435:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACAG 34

(2) INFORMATION FOR SEQ ID NO:436:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:436:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC ACA 33

(2) INFORMATION FOR SEQ ID NO:437:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:437:  
AAAGCTGAGA TGGAGGGCGG CATGGCGGGC AC 32

(2) INFORMATION FOR SEQ ID NO:438:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:438:

EPI-109

323

AAAGCTGAGA TGGAGGGCGG CATGGCGGGC A

31

(2) INFORMATION FOR SEQ ID NO:439:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:439:

AAAGCTGAGA TGGAGGGCGG CATGGCGGGC

30

(2) INFORMATION FOR SEQ ID NO:440:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:440:

AAAGCTGAGA TGGAGGGCGG CATGGCGGG

29

(2) INFORMATION FOR SEQ ID NO:441:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:441:

AAAGCTGAGA TGGAGGGCGG CATGGCGG

28

(2) INFORMATION FOR SEQ ID NO:442:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:442:

AAAGCTGAGA TGGAGGGCGG CATGGCG

27

(2) INFORMATION FOR SEQ ID NO:443:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:443:

AAAGCTGAGA TGGAGGGCGG CATGGC

26

(2) INFORMATION FOR SEQ ID NO:444:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:444:

AAAGCTGAGA TGGAGGGCGG CATGG

25

(2) INFORMATION FOR SEQ ID NO:445:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:445:

AAAGCTGAGA TGGAGGGCGG CATG

24

(2) INFORMATION FOR SEQ ID NO:446:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:446:

AAAGCTGAGA TGGAGGGCGG CAT

23

(2) INFORMATION FOR SEQ ID NO:447:



(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:447:  
AAAGCTGAGA TGGAGGGCGG CA 22

(2) INFORMATION FOR SEQ ID NO:448:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:448:  
AAAGCTGAGA TGGAGGGCGG C 21

(2) INFORMATION FOR SEQ ID NO:449:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:449:  
AAAGCTGAGA TGGAGGGCGG 20

(2) INFORMATION FOR SEQ ID NO:450:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:450:  
AAAGCTGAGA TGGAGGGCG 19

(2) INFORMATION FOR SEQ ID NO:451:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:451:  
AAAGCTGAGA TGGAGGGC 18

(2) INFORMATION FOR SEQ ID NO:452:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:452:  
AAAGCTGAGA TGGAGGG 17

(2) INFORMATION FOR SEQ ID NO:453:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:453:  
AAAGCTGAGA TGGAGG 16

(2) INFORMATION FOR SEQ ID NO:454:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:454:  
AAAGCTGAGA TGGAG 15

(2) INFORMATION FOR SEQ ID NO:455:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:455:  
AAAGCTGAGA TGGA 14

(2) INFORMATION FOR SEQ ID NO:456:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:456:  
AAAGCTGAGA TGG 13

(2) INFORMATION FOR SEQ ID NO:457:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:457:  
AAAGCTGAGA TG 12

(2) INFORMATION FOR SEQ ID NO:458:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:458:  
AAAGCTGAGA T 11

(2) INFORMATION FOR SEQ ID NO:459:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:459:  
AAAGCTGAGA 10

(2) INFORMATION FOR SEQ ID NO:460:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:460:  
AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCTGGGC 40

(2) INFORMATION FOR SEQ ID NO:461:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:461:  
AAAGCTGAGA T 11

(2) INFORMATION FOR SEQ ID NO:462:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:462:  
AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCTGG 38

(2) INFORMATION FOR SEQ ID NO:463:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:463:

AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCTG

37

## (2) INFORMATION FOR SEQ ID NO:464:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:464:

AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCT

36

## (2) INFORMATION FOR SEQ ID NO:465:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 35 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:465:

AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGGCT

35

## (2) INFORMATION FOR SEQ ID NO:466:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:466:

AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAGG

34

## (2) INFORMATION FOR SEQ ID NO:467:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:467:

AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CAG

33

## (2) INFORMATION FOR SEQ ID NO:468:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:468:

AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA CA

32

## (2) INFORMATION FOR SEQ ID NO:469:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:469:

AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA C

31

## (2) INFORMATION FOR SEQ ID NO:470:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:470:

AAGCTGAGAT GGAGGGCGGC ATGGCGGGCA

30

## (2) INFORMATION FOR SEQ ID NO:471:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:471:

AAGCTGAGAT GGAGGGCGGC ATGGCGGGC

29

## (2) INFORMATION FOR SEQ ID NO:472:

EPI-109

327

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:472:  
AAGCTGAGAT GGAGGGCGGC ATGGCGGG 28
- (2) INFORMATION FOR SEQ ID NO:473:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:473:  
AAGCTGAGAT GGAGGGCGGC ATGGCGG 27
- (2) INFORMATION FOR SEQ ID NO:474:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:474:  
AAGCTGAGAT GGAGGGCGGC ATGGCG 26
- (2) INFORMATION FOR SEQ ID NO:475:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:475:  
AAGCTGAGAT GGAGGGCGGC ATGGC 25
- (2) INFORMATION FOR SEQ ID NO:476:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:476:  
AAGCTGAGAT GGAGGGCGGC ATGG 24
- (2) INFORMATION FOR SEQ ID NO:477:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:477:  
AAGCTGAGAT GGAGGGCGGC ATG 23
- (2) INFORMATION FOR SEQ ID NO:478:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:478:  
AAGCTGAGAT GGAGGGCGGC AT 22
- (2) INFORMATION FOR SEQ ID NO:479:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:479:  
AAGCTGAGAT GGAGGGCGGC A 21
- (2) INFORMATION FOR SEQ ID NO:480:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:480:  
AAGCTGAGAT GGAGGGCGGC 20

(2) INFORMATION FOR SEQ ID NO:481:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:481:  
AAGCTGAGAT GGAGGGCGG 19

(2) INFORMATION FOR SEQ ID NO:482:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:482:  
AAGCTGAGAT GGAGGGCG 18

(2) INFORMATION FOR SEQ ID NO:483:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:483:  
AAGCTGAGAT GGAGGGC 17

(2) INFORMATION FOR SEQ ID NO:484:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:484:  
AAGCTGAGAT GGAGGG 16

(2) INFORMATION FOR SEQ ID NO:485:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:485:  
AAGCTGAGAT GGAGG 15

(2) INFORMATION FOR SEQ ID NO:486:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:486:  
AAGCTGAGAT GGAG 14

(2) INFORMATION FOR SEQ ID NO:487:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:487:  
AAGCTGAGAT GGA 13

(2) INFORMATION FOR SEQ ID NO:488:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:488:

EPI-109

329

AAGCTGAGAT GG

12

(2) INFORMATION FOR SEQ ID NO:489:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:489:

AAGCTGAGAT G

11

(2) INFORMATION FOR SEQ ID NO:490:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:490:

AAGCTGAGAT

10

(2) INFORMATION FOR SEQ ID NO:491:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 39 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:491:

AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCTGGGC

39

(2) INFORMATION FOR SEQ ID NO:492:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 38 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:492:

AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCTGGG

38

(2) INFORMATION FOR SEQ ID NO:493:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 37 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:493:

AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCTGG

37

(2) INFORMATION FOR SEQ ID NO:494:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 36 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:494:

AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCTG

36

(2) INFORMATION FOR SEQ ID NO:495:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 35 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:495:

AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGCT

35

(2) INFORMATION FOR SEQ ID NO:496:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 34 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:496:

AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGGC

34

(2) INFORMATION FOR SEQ ID NO:497:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:497:  
AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AGG 33
- (2) INFORMATION FOR SEQ ID NO:498:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:498:  
AGCTGAGATG GAGGGCGGCA TGGCGGGCAC AG 32
- (2) INFORMATION FOR SEQ ID NO:499:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:499:  
AGCTGAGATG GAGGGCGGCA TGGCGGGCAC A 31
- (2) INFORMATION FOR SEQ ID NO:500:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:500:  
AGCTGAGATG GAGGGCGGCA TGGCGGGCAC 30
- (2) INFORMATION FOR SEQ ID NO:501:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:501:  
AGCTGAGATG GAGGGCGGCA TGGCGGGCA 29
- (2) INFORMATION FOR SEQ ID NO:502:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:502:  
AGCTGAGATG GAGGGCGGCA TGGCGGGC 28
- (2) INFORMATION FOR SEQ ID NO:503:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:503:  
AGCTGAGATG GAGGGCGGCA TGGCGGG 27
- (2) INFORMATION FOR SEQ ID NO:504:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:504:  
AGCTGAGATG GAGGGCGGCA TGGCGG 26
- (2) INFORMATION FOR SEQ ID NO:505:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid



EPI-109

331

- (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:505:  
AGCTGAGATG GAGGGCGGCA TGGCG 25
- (2) INFORMATION FOR SEQ ID NO:506:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:506:  
AGCTGAGATG GAGGGCGGCA TGGC 24
- (2) INFORMATION FOR SEQ ID NO:507:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:507:  
AGCTGAGATG GAGGGCGGCA TGG 23
- (2) INFORMATION FOR SEQ ID NO:508:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:508:  
AGCTGAGATG GAGGGCGGCA TG 22
- (2) INFORMATION FOR SEQ ID NO:509:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:509:  
AGCTGAGATG GAGGGCGGCA T 21
- (2) INFORMATION FOR SEQ ID NO:510:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:510:  
AGCTGAGATG GAGGGCGGCA 20
- (2) INFORMATION FOR SEQ ID NO:511:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:511:  
AGCTGAGATG GAGGGCGGC 19
- (2) INFORMATION FOR SEQ ID NO:512:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:512:  
AGCTGAGATG GAGGGCGG 18
- (2) INFORMATION FOR SEQ ID NO:513:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:513:

EPI-109

332

AGCTGAGATG GAGGGCG

17

(2) INFORMATION FOR SEQ ID NO:514:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:514:

AGCTGAGATG GAGGGC

16

(2) INFORMATION FOR SEQ ID NO:515:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:515:

AGCTGAGATG GAGGG

15

(2) INFORMATION FOR SEQ ID NO:516:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:516:

AGCTGAGATG GAGG

14

(2) INFORMATION FOR SEQ ID NO:517:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:517:

AGCTGAGATG GAG

13

(2) INFORMATION FOR SEQ ID NO:518:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:518:

AGCTGAGATG GA

12

(2) INFORMATION FOR SEQ ID NO:519:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:519:

AGCTGAGATG G

11

(2) INFORMATION FOR SEQ ID NO:520:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:520:

AGCTGAGATG

10

(2) INFORMATION FOR SEQ ID NO:521:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 38 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:521:

GCTGAGATGG AGGGCGGCAT GCGGGCACA GGCTGGGC

38

(2) INFORMATION FOR SEQ ID NO:522:

EPI-109

333

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:522:  
GCTGAGATGG AGGGCGGCAT GCGGGCACA GGCTGGG 37
- (2) INFORMATION FOR SEQ ID NO:523:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:523:  
GCTGAGATGG AGGGCGGCAT GCGGGCACA GGCTGG 36
- (2) INFORMATION FOR SEQ ID NO:524:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:524:  
GCTGAGATGG AGGGCGGCAT GCGGGCACA GGCTG 35
- (2) INFORMATION FOR SEQ ID NO:525:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:525:  
GCTGAGATGG AGGGCGGCAT GCGGGCACA GGCT 34
- (2) INFORMATION FOR SEQ ID NO:526:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:526:  
GCTGAGATGG AGGGCGGCAT GCGGGCACA GGC 33
- (2) INFORMATION FOR SEQ ID NO:527:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:527:  
GCTGAGATGG AGGGCGGCAT GCGGGCACA GG 32
- (2) INFORMATION FOR SEQ ID NO:528:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:528:  
GCTGAGATGG AGGGCGGCAT GCGGGCACA G 31
- (2) INFORMATION FOR SEQ ID NO:529:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:529:  
GCTGAGATGG AGGGCGGCAT GCGGGCACA 30
- (2) INFORMATION FOR SEQ ID NO:530:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid

- (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:530:  
GCTGAGATGG AGGGCGGCAT GCGGGGCAC 29
- (2) INFORMATION FOR SEQ ID NO:531:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:531:  
GCTGAGATGG AGGGCGGCAT GCGGGGCA 28
- (2) INFORMATION FOR SEQ ID NO:532:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:532:  
GCTGAGATGG AGGGCGGCAT GCGGGGC 27
- (2) INFORMATION FOR SEQ ID NO:533:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:533:  
GCTGAGATGG AGGGCGGCAT GCGGGG 26
- (2) INFORMATION FOR SEQ ID NO:534:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:534:  
GCTGAGATGG AGGGCGGCAT GCGGG 25
- (2) INFORMATION FOR SEQ ID NO:535:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:535:  
GCTGAGATGG AGGGCGGCAT GGCG 24
- (2) INFORMATION FOR SEQ ID NO:536:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:536:  
GCTGAGATGG AGGGCGGCAT GGC 23
- (2) INFORMATION FOR SEQ ID NO:537:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:537:  
GCTGAGATGG AGGGCGGCAT GG 22
- (2) INFORMATION FOR SEQ ID NO:538:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:538:

EPI-109

335

GCTGAGATGG AGGGCGGCAT G

21

## (2) INFORMATION FOR SEQ ID NO:539:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:539:

GCTGAGATGG AGGGCGGCAT

20

## (2) INFORMATION FOR SEQ ID NO:540:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:540:

GCTGAGATGG AGGGCGGCA

19

## (2) INFORMATION FOR SEQ ID NO:541:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:541:

GCTGAGATGG AGGGCGGC

18

## (2) INFORMATION FOR SEQ ID NO:542:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:542:

GCTGAGATGG AGGGCGG

17

## (2) INFORMATION FOR SEQ ID NO:543:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:543:

GCTGAGATGG AGGGCG

16

## (2) INFORMATION FOR SEQ ID NO:544:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:544:

GCTGAGATGG AGGGC

15

## (2) INFORMATION FOR SEQ ID NO:545:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:545:

GCTGAGATGG AGGG

14

## (2) INFORMATION FOR SEQ ID NO:546:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:546:

GCTGAGATGG AGG

13

## (2) INFORMATION FOR SEQ ID NO:547:

EPI-109

336

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:547:  
GCTGAGATGG AG 12

(2) INFORMATION FOR SEQ ID NO:548:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:548:  
GCTGAGATGG A 11

(2) INFORMATION FOR SEQ ID NO:549:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:549:  
GCTGAGATGG 10

(2) INFORMATION FOR SEQ ID NO:550:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:550:  
CTGAGATGGA GGGCGGCATG GCGGGCACAG GCTGGGC 37

(2) INFORMATION FOR SEQ ID NO:551:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:551:  
CTGAGATGGA GGGCGGCATG GCGGGCACAG GCTGGG 36

(2) INFORMATION FOR SEQ ID NO:552:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:552:  
CTGAGATGGA GGGCGGCATG GCGGGCACAG GCTGG 35

(2) INFORMATION FOR SEQ ID NO:553:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:553:  
CTGAGATGGA GGGCGGCATG GCGGGCACAG GCTG 34

(2) INFORMATION FOR SEQ ID NO:554:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:554:  
CTGAGATGGA GGGCGGCATG GCGGGCACAG GCT 33

(2) INFORMATION FOR SEQ ID NO:555:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:555:  
CTGAGATGGA GGGCGGCATG GCGGGCACAG GC 32

(2) INFORMATION FOR SEQ ID NO:556:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:556:  
CTGAGATGGA GGGCGGCATG GCGGGCACAG G 31

(2) INFORMATION FOR SEQ ID NO:557:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:557:  
CTGAGATGGA GGGCGGCATG GCGGGCACAG 30

(2) INFORMATION FOR SEQ ID NO:558:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:558:  
CTGAGATGGA GGGCGGCATG GCGGGCACA 29

(2) INFORMATION FOR SEQ ID NO:559:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:559:  
CTGAGATGGA GGGCGGCATG GCGGGCAC 28

(2) INFORMATION FOR SEQ ID NO:560:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:560:  
CTGAGATGGA GGGCGGCATG GCGGGCA 27

(2) INFORMATION FOR SEQ ID NO:561:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:561:  
CTGAGATGGA GGGCGGCATG GCGGGC 26

(2) INFORMATION FOR SEQ ID NO:562:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:562:  
CTGAGATGGA GGGCGGCATG GCGGG 25

(2) INFORMATION FOR SEQ ID NO:563:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:563:



EPI-109

338

CTGAGATGGA GGGCGGCATG GCGG 24

(2) INFORMATION FOR SEQ ID NO:564:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:564:  
CTGAGATGGA GGGCGGCATG GCG 23

(2) INFORMATION FOR SEQ ID NO:565:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:565:  
CTGAGATGGA GGGCGGCATG GC 22

(2) INFORMATION FOR SEQ ID NO:566:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:566:  
CTGAGATGGA GGGCGGCATG G 21

(2) INFORMATION FOR SEQ ID NO:567:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:567:  
CTGAGATGGA GGGCGGCATG 20

(2) INFORMATION FOR SEQ ID NO:568:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:568:  
CTGAGATGGA GGGCGGCAT 19

(2) INFORMATION FOR SEQ ID NO:569:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:569:  
CTGAGATGGA GGGCGGCA 18

(2) INFORMATION FOR SEQ ID NO:570:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:570:  
CTGAGATGGA GGGCGGC 17

(2) INFORMATION FOR SEQ ID NO:571:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:571:  
CTGAGATGGA GGGCGG 16

(2) INFORMATION FOR SEQ ID NO:572:

EPI-109

339

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:572:  
CTGAGATGGA GGGCG 15

(2) INFORMATION FOR SEQ ID NO:573:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:573:  
CTGAGATGGA GGGC 14

(2) INFORMATION FOR SEQ ID NO:574:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:574:  
CTGAGATGGA GGG 13

(2) INFORMATION FOR SEQ ID NO:575:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:575:  
CTGAGATGGA GG 12

(2) INFORMATION FOR SEQ ID NO:576:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:576:  
CTGAGATGGA G 11

(2) INFORMATION FOR SEQ ID NO:577:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:577:  
CTGAGATGGA 10

(2) INFORMATION FOR SEQ ID NO:578:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:578:  
TGAGATGGAG GGCGGCATGG CGGGCACAGG CTGGGC 36

(2) INFORMATION FOR SEQ ID NO:579:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:579:  
TGAGATGGAG GGCGGCATGG CGGGCACAGG CTGGG 35

(2) INFORMATION FOR SEQ ID NO:580:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:580:  
TGAGATGGAG GCGGGCATGG CGGGCACAGG CTGG 34

(2) INFORMATION FOR SEQ ID NO:581:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:581:  
TGAGATGGAG GCGGGCATGG CGGGCACAGG CTG 33

(2) INFORMATION FOR SEQ ID NO:582:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:582:  
TGAGATGGAG GCGGGCATGG CGGGCACAGG CT 32

(2) INFORMATION FOR SEQ ID NO:583:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:583:  
TGAGATGGAG GCGGGCATGG CGGGCACAGG C 31

(2) INFORMATION FOR SEQ ID NO:584:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:584:  
TGAGATGGAG GCGGGCATGG CGGGCACAGG 30

(2) INFORMATION FOR SEQ ID NO:585:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:585:  
TGAGATGGAG GCGGGCATGG CGGGCACAG 29

(2) INFORMATION FOR SEQ ID NO:586:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:586:  
TGAGATGGAG GCGGGCATGG CGGGCACA 28

(2) INFORMATION FOR SEQ ID NO:587:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:587:  
TGAGATGGAG GCGGGCATGG CGGGCAC 27

(2) INFORMATION FOR SEQ ID NO:588:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:588:

EPI-109

341

TGAGATGGAG GCGGCATGG CGGGCA

26

(2) INFORMATION FOR SEQ ID NO:589:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:589:

TGAGATGGAG GCGGCATGG CGGGC

25

(2) INFORMATION FOR SEQ ID NO:590:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:590:

TGAGATGGAG GCGGCATGG CGGG

24

(2) INFORMATION FOR SEQ ID NO:591:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:591:

TGAGATGGAG GCGGCATGG CGG

23

(2) INFORMATION FOR SEQ ID NO:592:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:592:

TGAGATGGAG GCGGCATGG CG

22

(2) INFORMATION FOR SEQ ID NO:593:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:593:

TGAGATGGAG GCGGCATGG C

21

(2) INFORMATION FOR SEQ ID NO:594:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:594:

TGAGATGGAG GCGGCATGG

20

(2) INFORMATION FOR SEQ ID NO:595:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:595:

TGAGATGGAG GCGGCATG

19

(2) INFORMATION FOR SEQ ID NO:596:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:596:

TGAGATGGAG GCGGCAT

18

(2) INFORMATION FOR SEQ ID NO:597:

EPI-109

342

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:597:  
TGAGATGGAG GGCGGCA 17
- (2) INFORMATION FOR SEQ ID NO:598:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:598:  
TGAGATGGAG GGCGGC 16
- (2) INFORMATION FOR SEQ ID NO:599:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:599:  
TGAGATGGAG GGCGG 15
- (2) INFORMATION FOR SEQ ID NO:600:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:600:  
TGAGATGGAG GGCG 14
- (2) INFORMATION FOR SEQ ID NO:601:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:601:  
TGAGATGGAG GGC 13
- (2) INFORMATION FOR SEQ ID NO:602:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:602:  
TGAGATGGAG GG 12
- (2) INFORMATION FOR SEQ ID NO:603:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:603:  
TGAGATGGAG G 11
- (2) INFORMATION FOR SEQ ID NO:604:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:604:  
TGAGATGGAG 10
- (2) INFORMATION FOR SEQ ID NO:605:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid

EPI-109

343

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:605:  
GAGATGGAGG GCGGCATGGC GGGCACAGGC TGGGC 35

(2) INFORMATION FOR SEQ ID NO:606:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:606:  
GAGATGGAGG GCGGCATGGC GGGCACAGGC TGGG 34

(2) INFORMATION FOR SEQ ID NO:607:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:607:  
GAGATGGAGG GCGGCATGGC GGGCACAGGC TGG 33

(2) INFORMATION FOR SEQ ID NO:608:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:608:  
GAGATGGAGG GCGGCATGGC GGGCACAGGC TG 32

(2) INFORMATION FOR SEQ ID NO:609:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:609:  
GAGATGGAGG GCGGCATGGC GGGCACAGGC T 31

(2) INFORMATION FOR SEQ ID NO:610:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:610:  
GAGATGGAGG GCGGCATGGC GGGCACAGG 29

(2) INFORMATION FOR SEQ ID NO:611:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:611:  
GAGATGGAGG GCGGCATGGC GGGCACAGG 29

(2) INFORMATION FOR SEQ ID NO:612:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:612:  
GAGATGGAGG GCGGCATGGC GGGCACAG 28

(2) INFORMATION FOR SEQ ID NO:613:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:613:

EPI-109

344

GAGATGGAGG GCGGCATGGC GGGCACA

27

## (2) INFORMATION FOR SEQ ID NO:614:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:614:

GAGATGGAGG GCGGCATGGC GGGCAC

26

## (2) INFORMATION FOR SEQ ID NO:615:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:615:

GAGATGGAGG GCGGCATGGC GGGCA

25

## (2) INFORMATION FOR SEQ ID NO:616:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:616:

GAGATGGAGG GCGGCATGGC GGGC

24

## (2) INFORMATION FOR SEQ ID NO:617:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:617:

GAGATGGAGG GCGGCATGGC GGG

23

## (2) INFORMATION FOR SEQ ID NO:618:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:618:

GAGATGGAGG GCGGCATGGC GG

22

## (2) INFORMATION FOR SEQ ID NO:619:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:619:

GAGATGGAGG GCGGCATGGC G

21

## (2) INFORMATION FOR SEQ ID NO:620:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:620:

GAGATGGAGG GCGGCATGGC

20

## (2) INFORMATION FOR SEQ ID NO:621:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:621:

GAGATGGAGG GCGGCATGG

19

## (2) INFORMATION FOR SEQ ID NO:622:



EPI-109

345

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:622:  
GAGATGGAGG GCGGCATG 18
- (2) INFORMATION FOR SEQ ID NO:623:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:623:  
GAGATGGAGG GCGGCAT 17
- (2) INFORMATION FOR SEQ ID NO:624:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:624:  
GAGATGGAGG GCGGCA 16
- (2) INFORMATION FOR SEQ ID NO:625:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:625:  
GAGATGGAGG GCGGC 15
- (2) INFORMATION FOR SEQ ID NO:626:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:626:  
GAGATGGAGG GCGG 14
- (2) INFORMATION FOR SEQ ID NO:627:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:627:  
GAGATGGAGG GCG 13
- (2) INFORMATION FOR SEQ ID NO:628:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:628:  
GAGATGGAGG GC 12
- (2) INFORMATION FOR SEQ ID NO:629:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:629:  
GAGATGGAGG G 11
- (2) INFORMATION FOR SEQ ID NO:630:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid

EPI-109

346

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:630:  
GAGATGGAGG 10

(2) INFORMATION FOR SEQ ID NO:631:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:631:  
AGATGGAGGG CGGCATGGCG GGCACAGGCT GGGC 34

(2) INFORMATION FOR SEQ ID NO:632:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:632:  
AGATGGAGGG CGGCATGGCG GGCACAGGCT GGG 33

(2) INFORMATION FOR SEQ ID NO:633:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:633:  
AGATGGAGGG CGGCATGGCG GGCACAGGCT GG 32

(2) INFORMATION FOR SEQ ID NO:634:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:634:  
AGATGGAGGG CGGCATGGCG GGCACAGGCT G 31

(2) INFORMATION FOR SEQ ID NO:635:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:635:  
AGATGGAGGG CGGCATGGCG GGCACAGGCT 30

(2) INFORMATION FOR SEQ ID NO:636:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:636:  
AGATGGAGGG CGGCATGGCG GGCACAGGC 29

(2) INFORMATION FOR SEQ ID NO:637:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:637:  
AGATGGAGGG CGGCATGGCG GGCACAGG 28

(2) INFORMATION FOR SEQ ID NO:638:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:638:

EPI-109

347

AGATGGAGGG CGGCATGGCG GGCACAG

27

## (2) INFORMATION FOR SEQ ID NO:639:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:639:

AGATGGAGGG CGGCATGGCG GGCACA

26

## (2) INFORMATION FOR SEQ ID NO:640:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:640:

AGATGGAGGG CGGCATGGCG GGCAC

25

## (2) INFORMATION FOR SEQ ID NO:641:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:641:

AGATGGAGGG CGGCATGGCG GGCA

24

## (2) INFORMATION FOR SEQ ID NO:642:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:642:

AGATGGAGGG CGGCATGGCG GGC

23

## (2) INFORMATION FOR SEQ ID NO:643:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:643:

AGATGGAGGG CGGCATGGCG GG

22

## (2) INFORMATION FOR SEQ ID NO:644:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:644:

AGATGGAGGG CGGCATGGCG G

21

## (2) INFORMATION FOR SEQ ID NO:645:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:645:

AGATGGAGGG CGGCATGGCG

20

## (2) INFORMATION FOR SEQ ID NO:646:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:646:

AGATGGAGGG CGGCATGGC

19

## (2) INFORMATION FOR SEQ ID NO:647:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:647:  
AGATGGAGGG CGGCATGG 18
- (2) INFORMATION FOR SEQ ID NO:648:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:648:  
AGATGGAGGG CGGCATG 17
- (2) INFORMATION FOR SEQ ID NO:649:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:649:  
AGATGGAGGG CGGCAT 16
- (2) INFORMATION FOR SEQ ID NO:650:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:650:  
AGATGGAGGG CGGCA 15
- (2) INFORMATION FOR SEQ ID NO:651:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:651:  
AGATGGAGGG CGGC 14
- (2) INFORMATION FOR SEQ ID NO:652:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:652:  
AGATGGAGGG CGG 13
- (2) INFORMATION FOR SEQ ID NO:653:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:653:  
AGATGGAGGG CG 12
- (2) INFORMATION FOR SEQ ID NO:654:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:654:  
AGATGGAGGG C 11
- (2) INFORMATION FOR SEQ ID NO:655:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:655:  
AGATGGAGGG 10

(2) INFORMATION FOR SEQ ID NO:656:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:656:  
GATGGAGGGC GGCATGGCGG GCACAGGCTG GGC 33

(2) INFORMATION FOR SEQ ID NO:657:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:657:  
GATGGAGGGC GGCATGGCGG GCACAGGCTG GG 32

(2) INFORMATION FOR SEQ ID NO:658:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:658:  
GATGGAGGGC GGCATGGCGG GCACAGGCTG G 31

(2) INFORMATION FOR SEQ ID NO:659:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:659:  
GATGGAGGGC GGCATGGCGG GCACAGGCTG 30

(2) INFORMATION FOR SEQ ID NO:660:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:660:  
GATGGAGGGC GGCATGGCGG GCACAGGCT 29

(2) INFORMATION FOR SEQ ID NO:661:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:661:  
GATGGAGGGC GGCATGGCGG GCACAGGC 28

(2) INFORMATION FOR SEQ ID NO:662:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:662:  
GATGGAGGGC GGCATGGCGG GCACAGG 27

(2) INFORMATION FOR SEQ ID NO:663:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:663:

GATGGAGGGC GGCATGGCGG GCACAG

26

## (2) INFORMATION FOR SEQ ID NO:664:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:664:

GATGGAGGGC GGCATGGCGG GCACA

25

## (2) INFORMATION FOR SEQ ID NO:665:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:665:

GATGGAGGGC GGCATGGCGG GCAC

24

## (2) INFORMATION FOR SEQ ID NO:666:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:666:

GATGGAGGGC GGCATGGCGG GCA

23

## (2) INFORMATION FOR SEQ ID NO:667:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:667:

GATGGAGGGC GGCATGGCGG GC

22

## (2) INFORMATION FOR SEQ ID NO:668:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:668:

GATGGAGGGC GGCATGGCGG G

21

## (2) INFORMATION FOR SEQ ID NO:669:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:669:

GATGGAGGGC GGCATGGCGG

20

## (2) INFORMATION FOR SEQ ID NO:670:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:670:

GATGGAGGGC GGCATGGCG

19

## (2) INFORMATION FOR SEQ ID NO:671:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:671:

GATGGAGGGC GGCATGGC

18

## (2) INFORMATION FOR SEQ ID NO:672:

EPI-109

351

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:672:  
GATGGAGGGC GGCATGG 17

(2) INFORMATION FOR SEQ ID NO:673:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:673:  
GATGGAGGGC GGCATG 16

(2) INFORMATION FOR SEQ ID NO:674:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:674:  
GATGGAGGGC GGCAT 15

(2) INFORMATION FOR SEQ ID NO:675:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:675:  
GATGGAGGGC GGCA 14

(2) INFORMATION FOR SEQ ID NO:676:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:676:  
GATGGAGGGC GGC 13

(2) INFORMATION FOR SEQ ID NO:677:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:677:  
GATGGAGGGC GG 12

(2) INFORMATION FOR SEQ ID NO:678:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:678:  
GATGGAGGGC G 11

(2) INFORMATION FOR SEQ ID NO:679:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:679:  
GATGGAGGGC 10

(2) INFORMATION FOR SEQ ID NO:680:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid



(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:680:  
ATGGAGGGCG GCATGGCGGG CACAGGCTGG GC 32

(2) INFORMATION FOR SEQ ID NO:681:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:681:  
ATGGAGGGCG GCATGGCGGG CACAGGCTGG G 31

(2) INFORMATION FOR SEQ ID NO:682:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:682:  
ATGGAGGGCG GCATGGCGGG CACAGGCTGG 30

(2) INFORMATION FOR SEQ ID NO:683:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:683:  
ATGGAGGGCG GCATGGCGGG CACAGGCTG 29

(2) INFORMATION FOR SEQ ID NO:684:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:684:  
ATGGAGGGCG GCATGGCGGG CACAGGCT 28

(2) INFORMATION FOR SEQ ID NO:685:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:685:  
ATGGAGGGCG GCATGGCGGG CACAGGC 27

(2) INFORMATION FOR SEQ ID NO:686:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:686:  
ATGGAGGGCG GCATGGCGGG CACAGG 26

(2) INFORMATION FOR SEQ ID NO:687:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:687:  
ATGGAGGGCG GCATGGCGGG CACAG 25

(2) INFORMATION FOR SEQ ID NO:688:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:688:

EPI-109

353

ATGGAGGGCG GCATGGCGGG CACA

24

(2) INFORMATION FOR SEQ ID NO:689:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:689:

ATGGAGGGCG GCATGGCGGG CAC

23

(2) INFORMATION FOR SEQ ID NO:690:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:690:

ATGGAGGGCG GCATGGCGGG CA

22

(2) INFORMATION FOR SEQ ID NO:691:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:691:

ATGGAGGGCG GCATGGCGGG C

21

(2) INFORMATION FOR SEQ ID NO:692:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:692:

ATGGAGGGCG GCATGGCGGG

20

(2) INFORMATION FOR SEQ ID NO:693:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:693:

ATGGAGGGCG GCATGGCGG

19

(2) INFORMATION FOR SEQ ID NO:694:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:694:

ATGGAGGGCG GCATGGCG

18

(2) INFORMATION FOR SEQ ID NO:695:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:695:

ATGGAGGGCG GCATGGC

17

(2) INFORMATION FOR SEQ ID NO:696:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:696:

ATGGAGGGCG GCATGG

16

(2) INFORMATION FOR SEQ ID NO:697:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:697:  
ATGGAGGGCG GCATG 15
- (2) INFORMATION FOR SEQ ID NO:698:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:698:  
ATGGAGGGCG GCAT 14
- (2) INFORMATION FOR SEQ ID NO:699:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:699:  
ATGGAGGGCG GCA 13
- (2) INFORMATION FOR SEQ ID NO:700:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:700:  
ATGGAGGGCG GC 12
- (2) INFORMATION FOR SEQ ID NO:701:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:701:  
ATGGAGGGCG G 11
- (2) INFORMATION FOR SEQ ID NO:702:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:702:  
ATGGAGGGCG 10
- (2) INFORMATION FOR SEQ ID NO:703:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:703:  
TGGAGGGCGG CATGGCGGC ACAGGCTGGG C 31
- (2) INFORMATION FOR SEQ ID NO:704:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:704:  
TGGAGGGCGG CATGGCGGC ACAGGCTGGG 30
- (2) INFORMATION FOR SEQ ID NO:705:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid

EPI-109

355

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:705:  
TGGAGGGCGG CATGGCGGGC ACAGGCTGG 29

(2) INFORMATION FOR SEQ ID NO:706:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:706:  
TGGAGGGCGG CATGGCGGGC ACAGGCTG 28

(2) INFORMATION FOR SEQ ID NO:707:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:707:  
TGGAGGGCGG CATGGCGGGC ACAGGCT 27

(2) INFORMATION FOR SEQ ID NO:708:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:708:  
TGGAGGGCGG CATGGCGGGC ACAGGC 26

(2) INFORMATION FOR SEQ ID NO:709:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:709:  
TGGAGGGCGG CATGGCGGGC ACAGG 25

(2) INFORMATION FOR SEQ ID NO:710:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:710:  
TGGAGGGCGG CATGGCGGGC ACAG 24

(2) INFORMATION FOR SEQ ID NO:711:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:711:  
TGGAGGGCGG CATGGCGGGC ACA 23

(2) INFORMATION FOR SEQ ID NO:712:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:712:  
TGGAGGGCGG CATGGCGGGC AC 22

(2) INFORMATION FOR SEQ ID NO:713:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:713:

EPI-109

356

TGGAGGGCGG CATGGCGGC A

21

## (2) INFORMATION FOR SEQ ID NO:714:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:714:

TGGAGGGCGG CATGGCGGC

20

## (2) INFORMATION FOR SEQ ID NO:715:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:715:

TGGAGGGCGG CATGGCGG

19

## (2) INFORMATION FOR SEQ ID NO:716:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:716:

TGGAGGGCGG CATGGCGG

18

## (2) INFORMATION FOR SEQ ID NO:717:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:717:

TGGAGGGCGG CATGGCG

17

## (2) INFORMATION FOR SEQ ID NO:718:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:718:

TGGAGGGCGG CATGGC

16

## (2) INFORMATION FOR SEQ ID NO:719:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:719:

TGGAGGGCGG CATGG

15

## (2) INFORMATION FOR SEQ ID NO:720:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:720:

TGGAGGGCGG CATG

14

## (2) INFORMATION FOR SEQ ID NO:721:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:721:

TGGAGGGCGG CAT

13

## (2) INFORMATION FOR SEQ ID NO:722:

EPI-109

357

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:722:  
TGGAGGGCGG CA 12

(2) INFORMATION FOR SEQ ID NO:723:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:723:  
TGGAGGGCGG C 11

(2) INFORMATION FOR SEQ ID NO:724:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:724:  
TGGAGGGCGG 10

(2) INFORMATION FOR SEQ ID NO:725:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:725:  
GGAGGGCGGC ATGGCGGGCA CAGGCTGGGC 30

(2) INFORMATION FOR SEQ ID NO:726:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:726:  
GGAGGGCGGC ATGGCGGGCA CAGGCTGG 29

(2) INFORMATION FOR SEQ ID NO:727:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:727:  
GGAGGGCGGC ATGGCGGGCA CAGGCTGG 28

(2) INFORMATION FOR SEQ ID NO:728:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:728:  
GGAGGGCGGC ATGGCGGGCA CAGGCTG 27

(2) INFORMATION FOR SEQ ID NO:729:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:729:  
GGAGGGCGGC ATGGCGGGCA CAGGCT 26

(2) INFORMATION FOR SEQ ID NO:730:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid

EPI-109

358

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:730:  
GGAGGGCGGC ATGGCGGGCA CAGGC 25

(2) INFORMATION FOR SEQ ID NO:731:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:731:  
GGAGGGCGGC ATGGCGGGCA CAGG 24

(2) INFORMATION FOR SEQ ID NO:732:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:732:  
GGAGGGCGGC ATGGCGGGCA CAG 23

(2) INFORMATION FOR SEQ ID NO:733:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:733:  
GGAGGGCGGC ATGGCGGGCA CA 22

(2) INFORMATION FOR SEQ ID NO:734:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:734:  
GGAGGGCGGC ATGGCGGGCA C 21

(2) INFORMATION FOR SEQ ID NO:735:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:735:  
GGAGGGCGGC ATGGCGGGCA 20

(2) INFORMATION FOR SEQ ID NO:736:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:736:  
GGAGGGCGGC ATGGCGGGC 19

(2) INFORMATION FOR SEQ ID NO:737:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:737:  
GGAGGGCGGC ATGGCGGG 18

(2) INFORMATION FOR SEQ ID NO:738:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:738:



EPI-109

359

GGAGGGCGGC ATGGCGG

17

(2) INFORMATION FOR SEQ ID NO:739:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 16 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:739:

GGAGGGCGGC ATGGCG

16

(2) INFORMATION FOR SEQ ID NO:740:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:740:

GGAGGGCGGC ATGGC

15

(2) INFORMATION FOR SEQ ID NO:741:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:741:

GGAGGGCGGC ATGG

14

(2) INFORMATION FOR SEQ ID NO:742:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 13 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:742:

GGAGGGCGGC ATG

13

(2) INFORMATION FOR SEQ ID NO:743:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:743:

GGAGGGCGGC AT

12

(2) INFORMATION FOR SEQ ID NO:744:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:744:

GGAGGGCGGC A

11

(2) INFORMATION FOR SEQ ID NO:745:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:745:

GGAGGGCGGC

10

(2) INFORMATION FOR SEQ ID NO:746:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 29 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:746:

GAGGGCGGCA TGGCGGGCAC AGGCTGGGC

29

(2) INFORMATION FOR SEQ ID NO:747:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 28 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:747:  
 GAGGGCGGCA TGGCGGGCAC AGGCTGGG 28
- (2) INFORMATION FOR SEQ ID NO:748:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 27 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:748:  
 GAGGGCGGCA TGGCGGGCAC AGGCTGG 27
- (2) INFORMATION FOR SEQ ID NO:749:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 26 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:749:  
 GAGGGCGGCA TGGCGGGCAC AGGCTG 26
- (2) INFORMATION FOR SEQ ID NO:750:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 25 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:750:  
 GAGGGCGGCA TGGCGGGCAC AGGCT 25
- (2) INFORMATION FOR SEQ ID NO:751:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 24 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:751:  
 GAGGGCGGCA TGGCGGGCAC AGGC 24
- (2) INFORMATION FOR SEQ ID NO:752:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 23 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:752:  
 GAGGGCGGCA TGGCGGGCAC AGG 23
- (2) INFORMATION FOR SEQ ID NO:753:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 22 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:753:  
 GAGGGCGGCA TGGCGGGCAC AG 22
- (2) INFORMATION FOR SEQ ID NO:754:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 21 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:754:  
 GAGGGCGGCA TGGCGGGCAC A 21
- (2) INFORMATION FOR SEQ ID NO:755:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 base pairs  
 (B) TYPE: nucleic acid

EPI-109

361

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:755:  
GAGGGCGGCA TGGCGGGCAC 20

(2) INFORMATION FOR SEQ ID NO:756:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:756:  
GAGGGCGGCA TGGCGGGCA 19

(2) INFORMATION FOR SEQ ID NO:757:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:757:  
GAGGGCGGCA TGGCGGGC 18

(2) INFORMATION FOR SEQ ID NO:758:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:758:  
GAGGGCGGCA TGGCGGG 17

(2) INFORMATION FOR SEQ ID NO:759:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:759:  
GAGGGCGGCA TGGCGG 16

(2) INFORMATION FOR SEQ ID NO:760:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:760:  
GAGGGCGGCA TGGCG 15

(2) INFORMATION FOR SEQ ID NO:761:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:761:  
GAGGGCGGCA TGGC 14

(2) INFORMATION FOR SEQ ID NO:762:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:762:  
GAGGGCGGCA TGG 13

(2) INFORMATION FOR SEQ ID NO:763:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:763:

EPI-109

362

GAGGGCGGCA TG

12

(2) INFORMATION FOR SEQ ID NO:764:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:764:

GAGGGCGGCA T

11

(2) INFORMATION FOR SEQ ID NO:765:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:765:

GAGGGCGGCA

10

(2) INFORMATION FOR SEQ ID NO:766:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 28 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:766:

AGGGCGGCAT GCGGGGCACA GGCTGGGC

28

(2) INFORMATION FOR SEQ ID NO:767:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:767:

AGGGCGGCAT GCGGGGCACA GGCTGGG

27

(2) INFORMATION FOR SEQ ID NO:768:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 26 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:768:

AGGGCGGCAT GCGGGGCACA GGCTGG

26

(2) INFORMATION FOR SEQ ID NO:769:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 25 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:769:

AGGGCGGCAT GCGGGGCACA GGCTG

25

(2) INFORMATION FOR SEQ ID NO:770:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 24 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:770:

AGGGCGGCAT GCGGGGCACA GGCT

24

(2) INFORMATION FOR SEQ ID NO:771:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 23 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:771:

AGGGCGGCAT GCGGGGCACA GGC

23

(2) INFORMATION FOR SEQ ID NO:772:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:772:  
AGGGCGGCAT GCGGGGCACA GG 22
- (2) INFORMATION FOR SEQ ID NO:773:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:773:  
AGGGCGGCAT GCGGGGCACA G 21
- (2) INFORMATION FOR SEQ ID NO:774:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:774:  
AGGGCGGCAT GCGGGGCACA 20
- (2) INFORMATION FOR SEQ ID NO:775:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:775:  
AGGGCGGCAT GCGGGGCAC 19
- (2) INFORMATION FOR SEQ ID NO:776:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:776:  
AGGGCGGCAT GCGGGGCA 18
- (2) INFORMATION FOR SEQ ID NO:777:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:777:  
AGGGCGGCAT GCGGGG 17
- (2) INFORMATION FOR SEQ ID NO:778:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:778:  
AGGGCGGCAT GCGGG 16
- (2) INFORMATION FOR SEQ ID NO:779:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:779:  
AGGGCGGCAT GCGG 15
- (2) INFORMATION FOR SEQ ID NO:780:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:780:  
AGGGCGGCAT GGCG 14

(2) INFORMATION FOR SEQ ID NO:781:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:781:  
AGGGCGGCAT GGC 13

(2) INFORMATION FOR SEQ ID NO:782:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:782:  
AGGGCGGCAT GG 12

(2) INFORMATION FOR SEQ ID NO:783:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:783:  
AGGGCGGCAT G 11

(2) INFORMATION FOR SEQ ID NO:784:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:784:  
AGGGCGGCAT 10

(2) INFORMATION FOR SEQ ID NO:785:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:785:  
GGGCGGCATG GCGGGCACAG GCTGGC 27

(2) INFORMATION FOR SEQ ID NO:786:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:786:  
GGGCGGCATG GCGGGCACAG GCTGGG 26

(2) INFORMATION FOR SEQ ID NO:787:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:787:  
GGGCGGCATG GCGGGCACAG GCTGG 25

(2) INFORMATION FOR SEQ ID NO:788:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:788:

EPI-109

365

GGGCGGCATG GCGGGCACAG GCTG

24

## (2) INFORMATION FOR SEQ ID NO:789:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:789:

GGGCGGCATG GCGGGCACAG GCT

23

## (2) INFORMATION FOR SEQ ID NO:790:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:790:

GGGCGGCATG GCGGGCACAG GC

22

## (2) INFORMATION FOR SEQ ID NO:791:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:791:

GGGCGGCATG GCGGGCACAG G

21

## (2) INFORMATION FOR SEQ ID NO:792:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:792:

GGGCGGCATG GCGGGCACAG

20

## (2) INFORMATION FOR SEQ ID NO:793:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:793:

GGGCGGCATG GCGGGCACA

19

## (2) INFORMATION FOR SEQ ID NO:794:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:794:

GGGCGGCATG GCGGGCAC

18

## (2) INFORMATION FOR SEQ ID NO:795:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:795:

GGGCGGCATG GCGGGCA

17

## (2) INFORMATION FOR SEQ ID NO:796:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:796:

GGGCGGCATG GCGGGC

16

## (2) INFORMATION FOR SEQ ID NO:797:



EPI-109

366

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:797:  
GGGCGGCATG GCGGG 15
- (2) INFORMATION FOR SEQ ID NO:798:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:798:  
GGGCGGCATG GCGG 14
- (2) INFORMATION FOR SEQ ID NO:799:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:799:  
GGGCGGCATG GCG 13
- (2) INFORMATION FOR SEQ ID NO:800:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:800:  
GGGCGGCATG GC 12
- (2) INFORMATION FOR SEQ ID NO:801:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:801:  
GGGCGGCATG G 11
- (2) INFORMATION FOR SEQ ID NO:802:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:802:  
GGGCGGCATG 10
- (2) INFORMATION FOR SEQ ID NO:803:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:803:  
GGCGGCATGG CGGGCACAGG CTGGG 26
- (2) INFORMATION FOR SEQ ID NO:804:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:804:  
GGCGGCATGG CGGGCACAGG CTGGG 25
- (2) INFORMATION FOR SEQ ID NO:805:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid

EPI-109

367

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:805:  
GGCGGCATGG CGGGCACAGG CTGG 24

(2) INFORMATION FOR SEQ ID NO:806:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:806:  
GGCGGCATGG CGGGCACAGG CTG 23

(2) INFORMATION FOR SEQ ID NO:807:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:807:  
GGCGGCATGG CGGGCACAGG CT 22

(2) INFORMATION FOR SEQ ID NO:808:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:808:  
GGCGGCATGG CGGGCACAGG C 21

(2) INFORMATION FOR SEQ ID NO:809:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:809:  
GGCGGCATGG CGGGCACAGG 20

(2) INFORMATION FOR SEQ ID NO:810:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:810:  
GGCGGCATGG CGGGCACAG 19

(2) INFORMATION FOR SEQ ID NO:811:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:811:  
GGCGGCATGG CGGGCACA 18

(2) INFORMATION FOR SEQ ID NO:812:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:812:  
GGCGGCATGG CGGGCAC 17

(2) INFORMATION FOR SEQ ID NO:813:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:813:

GGCGGCATGG CGGGCA

16

(2) INFORMATION FOR SEQ ID NO:814:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: singl

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:814:

GGCGGCATGG CGGGC

15

(2) INFORMATION FOR SEQ ID NO:815:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:815:

GGCGGCATGG CGGG

14

(2) INFORMATION FOR SEQ ID NO:816:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 13 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:816:

GGCGGCATGG CGG

13

(2) INFORMATION FOR SEQ ID NO:817:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:817:

GGCGGCATGG CG

12

(2) INFORMATION FOR SEQ ID NO:818:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:818:

GGCGGCATGG C

11

(2) INFORMATION FOR SEQ ID NO:819:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:819:

GGCGGCATGG

10

(2) INFORMATION FOR SEQ ID NO:820:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 25 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:820:

GCGGCATGGC GGGCACAGGC TGGGC

25

(2) INFORMATION FOR SEQ ID NO:821:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 24 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:821:

GCGGCATGGC GGGCACAGGC TGGG

24

(2) INFORMATION FOR SEQ ID NO:822:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:822:  
GCGGCATGGC GGGCACAGGC TGG 23
- (2) INFORMATION FOR SEQ ID NO:823:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:823:  
GCGGCATGGC GGGCACAGGC TG 22
- (2) INFORMATION FOR SEQ ID NO:824:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:824:  
GCGGCATGGC GGGCACAGGC T 21
- (2) INFORMATION FOR SEQ ID NO:825:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:825:  
GCGGCATGGC GGGCACAGGC 20
- (2) INFORMATION FOR SEQ ID NO:826:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:826:  
GCGGCATGGC GGGCACAGG 19
- (2) INFORMATION FOR SEQ ID NO:827:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:827:  
GCGGCATGGC GGGCACAG 18
- (2) INFORMATION FOR SEQ ID NO:828:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:828:  
GCGGCATGGC GGGCACA 17
- (2) INFORMATION FOR SEQ ID NO:829:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:829:  
GCGGCATGGC GGGCAC 16
- (2) INFORMATION FOR SEQ ID NO:830:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:830:  
GCGGCATGGC GGGCA 15

(2) INFORMATION FOR SEQ ID NO:831:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:831:  
GCGGCATGGC GGGC 14

(2) INFORMATION FOR SEQ ID NO:832:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:832:  
GCGGCATGGC GGG 13

(2) INFORMATION FOR SEQ ID NO:833:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:833:  
GCGGCATGGC GG 12

(2) INFORMATION FOR SEQ ID NO:834:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:834:  
GCGGCATGGC G 11

(2) INFORMATION FOR SEQ ID NO:835:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:835:  
GCGGCATGGC 10

(2) INFORMATION FOR SEQ ID NO:836:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:836:  
CGGCATGGCG GGCACAGGCT GGGC 24

(2) INFORMATION FOR SEQ ID NO:837:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:837:  
CGGCATGGCG GGCACAGGCT GGG 23

(2) INFORMATION FOR SEQ ID NO:838:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:838:

EPI-109

371

CGGCATGGCG GGCACAGGCT GG

22

## (2) INFORMATION FOR SEQ ID NO:839:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:839:

CGGCATGGCG GGCACAGGCT G

21

## (2) INFORMATION FOR SEQ ID NO:840:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:840:

CGGCATGGCG GGCACAGGCT

20

## (2) INFORMATION FOR SEQ ID NO:841:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:841:

CGGCATGGCG GGCACAGGC

19

## (2) INFORMATION FOR SEQ ID NO:842:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:842:

CGGCATGGCG GGCACAGG

18

## (2) INFORMATION FOR SEQ ID NO:843:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:843:

CGGCATGGCG GGCACAG

17

## (2) INFORMATION FOR SEQ ID NO:844:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:844:

CGGCATGGCG GGCACA

16

## (2) INFORMATION FOR SEQ ID NO:845:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:845:

CGGCATGGCG GGCAC

15

## (2) INFORMATION FOR SEQ ID NO:846:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:846:

CGGCATGGCG GGCA

14

## (2) INFORMATION FOR SEQ ID NO:847:

EPI-109

372

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:847:  
CGGCATGGCG GGC 13
- (2) INFORMATION FOR SEQ ID NO:848:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:848:  
CGGCATGGCG GG 12
- (2) INFORMATION FOR SEQ ID NO:849:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:849:  
CGGCATGGCG G 11
- (2) INFORMATION FOR SEQ ID NO:850:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:850:  
CGGCATGGCG 10
- (2) INFORMATION FOR SEQ ID NO:851:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:851:  
GGCATGGCGG GCACAGGCTG GGC 23
- (2) INFORMATION FOR SEQ ID NO:852:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:852:  
GGCATGGCGG GCACAGGCTG GG 22
- (2) INFORMATION FOR SEQ ID NO:853:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:853:  
GGCATGGCGG GCACAGGCTG G 21
- (2) INFORMATION FOR SEQ ID NO:854:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:854:  
GGCATGGCGG GCACAGGCTG 20
- (2) INFORMATION FOR SEQ ID NO:855:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid



EPI-109

373

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:855:  
GGCATGGCGG GCACAGGCT 19

(2) INFORMATION FOR SEQ ID NO:856:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:856:  
GGCATGGCGG GCACAGGC 18

(2) INFORMATION FOR SEQ ID NO:857:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:857:  
GGCATGGCGG GCACAGG 17

(2) INFORMATION FOR SEQ ID NO:858:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:858:  
GGCATGGCGG GCACAG 16

(2) INFORMATION FOR SEQ ID NO:859:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:859:  
GGCATGGCGG GCACA 15

(2) INFORMATION FOR SEQ ID NO:860:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:860:  
GGCATGGCGG GCAC 14

(2) INFORMATION FOR SEQ ID NO:861:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:861:  
GGCATGGCGG GCA 13

(2) INFORMATION FOR SEQ ID NO:862:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:862:  
GGCATGGCGG GC 12

(2) INFORMATION FOR SEQ ID NO:863:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:863:

EPI-109

374

GGCATGGCGG G

11

## (2) INFORMATION FOR SEQ ID NO:864:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:864:

GGCATGGCGG

10

## (2) INFORMATION FOR SEQ ID NO:865:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:865:

GCATGGCGGG CACAGGCTGG GC

22

## (2) INFORMATION FOR SEQ ID NO:866:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:866:

GCATGGCGGG CACAGGCTGG G

21

## (2) INFORMATION FOR SEQ ID NO:867:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:867:

GCATGGCGGG CACAGGCTGG

20

## (2) INFORMATION FOR SEQ ID NO:868:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:868:

GCATGGCGGG CACAGGCTG

19

## (2) INFORMATION FOR SEQ ID NO:869:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:869:

GCATGGCGGG CACAGGCT

18

## (2) INFORMATION FOR SEQ ID NO:870:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:870:

GCATGGCGGG CACAGGC

17

## (2) INFORMATION FOR SEQ ID NO:871:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:871:

GCATGGCGGG CACAGG

16

## (2) INFORMATION FOR SEQ ID NO:872:

EPI-109

375

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:872:  
GCATGGCGGG CACAG 15
- (2) INFORMATION FOR SEQ ID NO:873:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:873:  
GCATGGCGGG CACA 14
- (2) INFORMATION FOR SEQ ID NO:874:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:874:  
GCATGGCGGG CAC 13
- (2) INFORMATION FOR SEQ ID NO:875:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:875:  
GCATGGCGGG CA 12
- (2) INFORMATION FOR SEQ ID NO:876:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:876:  
GCATGGCGGG C 11
- (2) INFORMATION FOR SEQ ID NO:877:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:877:  
GCATGGCGGG 10
- (2) INFORMATION FOR SEQ ID NO:878:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:878:  
CATGGCGGGC ACAGGCTGGG C 21
- (2) INFORMATION FOR SEQ ID NO:879:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:879:  
CATGGCGGGC ACAGGCTGGG 20
- (2) INFORMATION FOR SEQ ID NO:880:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:880:  
CATGGCGGGC ACAGGCTGG 19

(2) INFORMATION FOR SEQ ID NO:881:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:881:  
CATGGCGGGC ACAGGCTG 18

(2) INFORMATION FOR SEQ ID NO:882:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:882:  
CATGGCGGGC ACAGGCT 17

(2) INFORMATION FOR SEQ ID NO:883:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:883:  
CATGGCGGGC ACAGGC 16

(2) INFORMATION FOR SEQ ID NO:884:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:884:  
CATGGCGGGC ACAGG 15

(2) INFORMATION FOR SEQ ID NO:885:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:885:  
CATGGCGGGC ACAG 14

(2) INFORMATION FOR SEQ ID NO:886:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:886:  
CATGGCGGGC ACA 13

(2) INFORMATION FOR SEQ ID NO:887:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:887:  
CATGGCGGGC AC 12

(2) INFORMATION FOR SEQ ID NO:888:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:888:

EPI-109

377

CATGGCGGGC A

11

(2) INFORMATION FOR SEQ ID NO:889:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:889:

CATGGCGGGC

10

(2) INFORMATION FOR SEQ ID NO:890:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:890:

ATGGCGGGCA CAGGCTGGGC

20

(2) INFORMATION FOR SEQ ID NO:891:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:891:

ATGGCGGGCA CAGGCTGGG

19

(2) INFORMATION FOR SEQ ID NO:892:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:892:

ATGGCGGGCA CAGGCTGG

18

(2) INFORMATION FOR SEQ ID NO:893:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:893:

ATGGCGGGCA CAGGCTG

17

(2) INFORMATION FOR SEQ ID NO:894:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:894:

ATGGCGGGCA CAGGCT

16

(2) INFORMATION FOR SEQ ID NO:895:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:895:

ATGGCGGGCA CAGGC

15

(2) INFORMATION FOR SEQ ID NO:896:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:896:

ATGGCGGGCA CAGG

14

(2) INFORMATION FOR SEQ ID NO:897:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:897:  
ATGGCGGGCA CAG 13
- (2) INFORMATION FOR SEQ ID NO:898:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:898:  
ATGGCGGGCA CA 12
- (2) INFORMATION FOR SEQ ID NO:899:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:899:  
ATGGCGGGCA C 11
- (2) INFORMATION FOR SEQ ID NO:900:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:900:  
ATGGCGGGCA 10
- (2) INFORMATION FOR SEQ ID NO:901:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:901:  
TGGCGGGCAC AGGCTGGGC 19
- (2) INFORMATION FOR SEQ ID NO:902:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:902:  
TGGCGGGCAC AGGCTGGG 18
- (2) INFORMATION FOR SEQ ID NO:903:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:903:  
TGGCGGGCAC AGGCTGG 17
- (2) INFORMATION FOR SEQ ID NO:904:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:904:  
TGGCGGGCAC AGGCTG 16
- (2) INFORMATION FOR SEQ ID NO:905:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid

- (C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:905:  
TGGCGGGCAC AGGCT 15
- (2) INFORMATION FOR SEQ ID NO:906:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:906:  
TGGCGGGCAC AGGC 14
- (2) INFORMATION FOR SEQ ID NO:907:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:907:  
TGGCGGGCAC AGG 13
- (2) INFORMATION FOR SEQ ID NO:908:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:908:  
TGGCGGGCAC AG 12
- (2) INFORMATION FOR SEQ ID NO:909:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:909:  
TGGCGGGCAC A 11
- (2) INFORMATION FOR SEQ ID NO:910:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:910:  
TGGCGGGCAC 10
- (2) INFORMATION FOR SEQ ID NO:911:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:911:  
GGCGGGCACCA GGCTGGGC 18
- (2) INFORMATION FOR SEQ ID NO:912:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:912:  
GGCGGGCACCA GGCTGGG 17
- (2) INFORMATION FOR SEQ ID NO:913:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:913:



GGCGGGCACA GGCTGG

16

## (2) INFORMATION FOR SEQ ID NO:914:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:914:

GGCGGGCACA GGCTG

15

## (2) INFORMATION FOR SEQ ID NO:915:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:915:

GGCGGGCACA GGCT

14

## (2) INFORMATION FOR SEQ ID NO:916:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:916:

GGCGGGCACA GGC

13

## (2) INFORMATION FOR SEQ ID NO:917:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:917:

GGCGGGCACA GG

12

## (2) INFORMATION FOR SEQ ID NO:918:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:918:

GGCGGGCACA G

11

## (2) INFORMATION FOR SEQ ID NO:919:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:919:

GGCGGGCACA

10

## (2) INFORMATION FOR SEQ ID NO:920:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:920:

GCGGGCACAG GCTGGGC

17

## (2) INFORMATION FOR SEQ ID NO:921:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:921:

GCGGGCACAG GCTGGG

16

## (2) INFORMATION FOR SEQ ID NO:922:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:922:  
GCGGGCACAG GCTGG 15
- (2) INFORMATION FOR SEQ ID NO:923:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:923:  
GCGGGCACAG GCTG 14
- (2) INFORMATION FOR SEQ ID NO:924:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:924:  
GCGGGCACAG GCT 13
- (2) INFORMATION FOR SEQ ID NO:925:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:925:  
GCGGGCACAG GC 12
- (2) INFORMATION FOR SEQ ID NO:926:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:926:  
GCGGGCACAG G 11
- (2) INFORMATION FOR SEQ ID NO:927:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:927:  
GCGGGCACAG 10
- (2) INFORMATION FOR SEQ ID NO:928:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:928:  
CGGGCACAGG CTGGGC 16
- (2) INFORMATION FOR SEQ ID NO:929:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:929:  
GGGCACAGGC TGGG 14
- (2) INFORMATION FOR SEQ ID NO:930:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs

EPI-109

382

(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:930:  
CGGGCACAGG CTGG 14

(2) INFORMATION FOR SEQ ID NO:931:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:931:  
CGGGCACAGG CTG 13

(2) INFORMATION FOR SEQ ID NO:932:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:932:  
CGGGCACAGG CT 12

(2) INFORMATION FOR SEQ ID NO:933:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:933:  
CGGGCACAGG C 11

(2) INFORMATION FOR SEQ ID NO:934:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:934:  
CGGGCACAGG 10

(2) INFORMATION FOR SEQ ID NO:935:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:935:  
GGGCACAGGC TGGGC 15

(2) INFORMATION FOR SEQ ID NO:936:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:936:  
GGGCACAGGC TGGG 14

(2) INFORMATION FOR SEQ ID NO:937:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:937:  
GGGCACAGGC TGG 13

(2) INFORMATION FOR SEQ ID NO:938:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

EPI-109

383

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:938:  
GGGCACAGGC TG 12

(2) INFORMATION FOR SEQ ID NO:939:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:939:  
GGGCACAGGC T 11

(2) INFORMATION FOR SEQ ID NO:940:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:940:  
GGGCACAGGC 10

(2) INFORMATION FOR SEQ ID NO:941:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:941:  
GGCACAGGCT GGGC 14

(2) INFORMATION FOR SEQ ID NO:942:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:942:  
GGCACAGGCT GGG 13

(2) INFORMATION FOR SEQ ID NO:943:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:943:  
GGCACAGGCT GG 12

(2) INFORMATION FOR SEQ ID NO:944:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:944:  
GGCACAGGCT G 11

(2) INFORMATION FOR SEQ ID NO:945:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:945:  
GGCACAGGCT 10

(2) INFORMATION FOR SEQ ID NO:946:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:946:  
GCACAGGCTG GGC 13

EPI-109

384

(2) INFORMATION FOR SEQ ID NO:947:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 12 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:947:  
GCACAGGCTG GG 12

(2) INFORMATION FOR SEQ ID NO:948:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 11 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:948:  
GCACAGGCTG G 11

(2) INFORMATION FOR SEQ ID NO:949:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 10 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:949:  
GCACAGGCTG 10

(2) INFORMATION FOR SEQ ID NO:950:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 12 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:950:  
CACAGGCTGG GC 12

(2) INFORMATION FOR SEQ ID NO:951:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 11 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:951:  
CACAGGCTGG G 11

(2) INFORMATION FOR SEQ ID NO:952:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 10 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:952:  
CACAGGCTGG 10

(2) INFORMATION FOR SEQ ID NO:953:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 11 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:953:  
ACAGGCTGGG C 11

(2) INFORMATION FOR SEQ ID NO:954:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 10 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:954:  
ACAGGCTGGG 10

(2) INFORMATION FOR SEQ ID NO:955:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 10 base pairs

EPI-109

385

(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:955:  
CAGGCTGGGC 10

(2) INFORMATION FOR SEQ ID NO:956:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:956:  
TTTTCCTTCC TTTGTCTCTC TTC 23

(2) INFORMATION FOR SEQ ID NO:957:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:957:  
GCTCCCGGCT GCCTG 15

(2) INFORMATION FOR SEQ ID NO:958:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:958:  
CTCGGCCGTG CGGCTCTGTC GTCGCCGT 29

(2) INFORMATION FOR SEQ ID NO:959:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:959:  
CCGCCGCCCT CCGGGGGGTC 20

(2) INFORMATION FOR SEQ ID NO:960:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:960:  
TGCTGCCGTT GGCTGCC 18

(2) INFORMATION FOR SEQ ID NO:961:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:961:  
CTTCTGCCGG TCGCCG 17

(2) INFORMATION FOR SEQ ID NO:962:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:962:  
TGCTGGGCTT GTGGC 15

(2) INFORMATION FOR SEQ ID NO:963:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

EPI-109

386

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:963:  
GGCCTCTCTT CTGGG 15

(2) INFORMATION FOR SEQ ID NO:964:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:964:  
CCTGGTCCCT CCGT 14

(2) INFORMATION FOR SEQ ID NO:965:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:965:  
GGTGGCTCCT CTGC 14

(2) INFORMATION FOR SEQ ID NO:966:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:966:  
GCTTGGTCCT GGGGCTGC 18

(2) INFORMATION FOR SEQ ID NO:967:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:967:  
TGCTCTCCTC TCCTT 15

(2) INFORMATION FOR SEQ ID NO:968:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:968:  
TGCTTTTCTT TTCTGGGCCT C 21

(2) INFORMATION FOR SEQ ID NO:969:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:969:  
TGTGGTCTGT TTTTCTG 19

(2) INFORMATION FOR SEQ ID NO:970:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:970:  
GCCCTGCTGG GCGCTCTCC 20

(2) INFORMATION FOR SEQ ID NO:971:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:971:  
GCCGCCCGCC TGGCTCCC 18



EPI-109

387

(2) INFORMATION FOR SEQ ID NO:972:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:972:  
GGBGCCCBTG BTGGGCBTGC C 21

(2) INFORMATION FOR SEQ ID NO:973:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:973:  
GTGGTTCCTG CCCTCCTTG GCTG 24

(2) INFORMATION FOR SEQ ID NO:974:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:974:  
CCGTGCCCCG TCCCCGGC 18

(2) INFORMATION FOR SEQ ID NO:975:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:975:  
CTCCTGGCGG GTGGCCGTTG 20

(2) INFORMATION FOR SEQ ID NO:976:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:976:  
GGCCCGTGT CCCCTGGG 18

(2) INFORMATION FOR SEQ ID NO:977:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:977:  
GCCTGGGGCT CCCTTCTCTC 20

(2) INFORMATION FOR SEQ ID NO:978:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:978:  
GCCCTTCTG CTGGGCCTC 19

(2) INFORMATION FOR SEQ ID NO:979:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:979:  
TGCTGCTGCT GGTGCTGTGG CCCCC 25

(2) INFORMATION FOR SEQ ID NO:980:  
(i) SEQUENCE CHARACTERISTICS:

EPI-109

388

(A) LENGTH: 43 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:980:  
GTACACCGAG GAGCCCATGA TGGGCATGCC ACAGACGACA GGC 43

(2) INFORMATION FOR SEQ ID NO:981:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 43 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:981:  
GTBCBCCGBG GBGCCCCBTGB TGGGCBTGCC BCBGBCBGBCB GGC 43

(2) INFORMATION FOR SEQ ID NO:982:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:982:  
GGCGCCGTGC CGCGTCTTGG TGGCGGCGG 29

(2) INFORMATION FOR SEQ ID NO:983:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:983:  
GTTTCGCGCCC GCGCGGGGCC CCTCCGGTCC 30

(2) INFORMATION FOR SEQ ID NO:984:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:984:  
GTTTCGCGCCC GCGCGGGGCC CCTCCGGTCC 30

(2) INFORMATION FOR SEQ ID NO:985:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:985:  
CGGGTCGGGG CCCCCGCGG CC 22

(2) INFORMATION FOR SEQ ID NO:986:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:986:  
GCCTCGGGGC TGGGGCGCTG GTGGCCGGG 29

(2) INFORMATION FOR SEQ ID NO:987:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:987:  
CCGCGCCTCC GCCTGCCGCT TCTG 24

(2) INFORMATION FOR SEQ ID NO:988:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid

EPI-109

389

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:988:  
GCTGGGCCCC GGGCGCCCC T 21

(2) INFORMATION FOR SEQ ID NO:989:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:989:  
CCCCCTCTTGC TCGGGTCCCC GTG 23

(2) INFORMATION FOR SEQ ID NO:990:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 48 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:990:  
ACAGCGCGTC CTGTGTCTCC AGCAGCATGG CCGGGCCAGC TGGGCCCC 48

(2) INFORMATION FOR SEQ ID NO:991:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 48 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:991:  
BCBGCGCGTC CTGTGTCTCC BGCBCBTGG CCGGGCCBGC TGGGCCCC 48

(2) INFORMATION FOR SEQ ID NO:992:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:992:  
ACAGAGCATG CTGTTGTTGG GCATCTTGCC TTCCAGGG 39

(2) INFORMATION FOR SEQ ID NO:993:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:993:  
BCBGBGCBTG CTGTTGTTGG GCBTCTTGCC TTCCBGGG 39

(2) INFORMATION FOR SEQ ID NO:994:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:994:  
CCCTTTTCTG GTGGGGTG 18

(2) INFORMATION FOR SEQ ID NO:995:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:995:  
GTGCTGTTGT TGGG 15

(2) INFORMATION FOR SEQ ID NO:996:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single

EPI-109

390

(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:996:  
TTTCTTCTGT TCCC 14

(2) INFORMATION FOR SEQ ID NO:997:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:997:  
CCCTTTTCTG GTGGGGTG 18

(2) INFORMATION FOR SEQ ID NO:998:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:998:  
GTGCTGTTGT TGGGC 15

(2) INFORMATION FOR SEQ ID NO:999:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:999:  
TTTCTTCTGT TCCC 14

(2) INFORMATION FOR SEQ ID NO:1000:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1000:  
TTTCCCCTGG GTCTTCC 17

(2) INFORMATION FOR SEQ ID NO:1001:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1001:  
CTCCTGCTCT TTTTTC 16

(2) INFORMATION FOR SEQ ID NO:1002:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 50 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1002:  
ATTGCTCTC CTATTACTTT CTGTGTCCAT TTTTTCATTA ACCGAGCTGT 50

(2) INFORMATION FOR SEQ ID NO:1003:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 50 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1003:  
BTTTGCTCTC CTBTBCTTT CTGTGTCCBT TTTTTCBTTB BCCGBGCTGT 50

(2) INFORMATION FOR SEQ ID NO:1004:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1004:

EPI-109

391

GCCTGTGTCT GTCCTCCT

18

(2) INFORMATION FOR SEQ ID NO:1005:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 18 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1005:

GCTTCGTTCC TCTCGTTC

18

(2) INFORMATION FOR SEQ ID NO:1006:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1006:

CTGCTTGGTG CCCTTGCCG

19

(2) INFORMATION FOR SEQ ID NO:1007:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 22 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1007:

GTCCTGCTCC TCCGGGCTGT GG

22

(2) INFORMATION FOR SEQ ID NO:1008:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 36 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1008:

GTCGTGGCCC TGGCTCCGC TGGTGGGCTC CCCTGG

36

(2) INFORMATION FOR SEQ ID NO:1009:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 22 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1009:

CCTTCGCTGG CTGGCGGCGT GC

22

(2) INFORMATION FOR SEQ ID NO:1010:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 24 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1010:

GGGTCTTGCT CTGGGCTTG CTGT

24

(2) INFORMATION FOR SEQ ID NO:1011:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1011:

GGCCGTGGTT GGGGCTTC

20

(2) INFORMATION FOR SEQ ID NO:1012:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1012:

GCTGCCTCCG TTTGGGTGGC

20

(2) INFORMATION FOR SEQ ID NO:1013:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 50 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1013:  
TCTCTGAATA TTGACCTTCC TCCATGGCGG TCCTGCTTGG ATTCTCCCGA 50

(2) INFORMATION FOR SEQ ID NO:1014:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 50 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1014:  
TCTCTGBBTB TTGBCCTTCC TCCBTGGCGG TCCTGCTTGG BTTCTCCCGB 50

(2) INFORMATION FOR SEQ ID NO:1015:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 39 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1015:  
GCCTTTCCTG GTTCTCTTGT TGTTTTGGG GTTTGGCTT 39

(2) INFORMATION FOR SEQ ID NO:1016:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 50 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1016:  
ACAGTAGAGT AGGGGATTCC ATGGCAGGAG CCATCTTCTT CATGGACTCC 50

(2) INFORMATION FOR SEQ ID NO:1017:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 50 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1017:  
TTCAAGGAGA CCTTAGGTTT CTGAGGGACT GCTAACACGC CATCTGGAGC 50

(2) INFORMATION FOR SEQ ID NO:1018:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 77 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1018:  
BCBGTBGBGT BGGGGBTTCC BTGGCBGBG CCBTCTTCTT CBTGGBCTCC TTCBBGBGBG 60  
CCTTBGGTTT CTGBGGG 77

(2) INFORMATION FOR SEQ ID NO:1019:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1019:  
BCTGCTBBCB CGCCBTCTGG BGC 23

(2) INFORMATION FOR SEQ ID NO:1020:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1020:  
GTTGTTTTTG GGGTTTGGCT T 21

EPI-109

393

## (2) INFORMATION FOR SEQ ID NO:1021:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1021:

GCCTTTCCTG GTTCTCTT

18

## (2) INFORMATION FOR SEQ ID NO:1022:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 50 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: Genomic DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1022:

BCBGTBGBGT BGGGBTTCC BTGGCBGBG CCBCTTCTT CBTGGBCTCC

50

## (2) INFORMATION FOR SEQ ID NO:1023:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 50 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: Genomic DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1023:

TTCBGGGBG CTTBGGTTT CTGBGGGBCT GCTBBCBCG CBTCTGGBGC

50

## (2) INFORMATION FOR SEQ ID NO:1024:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1024:

GCCTGTGTCT GTCCTCCT

18

## (2) INFORMATION FOR SEQ ID NO:1025:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1025:

GCTTCGTTCC TCTCGTTC

18

## (2) INFORMATION FOR SEQ ID NO:1026:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1026:

CTGCTTGGTG CCCTTGCCG

19

## (2) INFORMATION FOR SEQ ID NO:1027:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1027:

GTCCTGCTCC TCCGGGCTGT GG

22

## (2) INFORMATION FOR SEQ ID NO:1028:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1028:

GTCCTCGCCC TGGCTCCGGC TGGTGGGCTC CCCTGG

36

## (2) INFORMATION FOR SEQ ID NO:1029:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1029:  
CCTTCGCTGG CTGGCGGCGT GC 22
- (2) INFORMATION FOR SEQ ID NO:1030:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1030:  
CCCBGBBCGB GBCCCGGBCC GBCB 24
- (2) INFORMATION FOR SEQ ID NO:1031:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1031:  
GGCCGTGGTT GGGGGTCTTC 20
- (2) INFORMATION FOR SEQ ID NO:1032:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1032:  
GCTGCCTCCG TTTGGGTGGC 20
- (2) INFORMATION FOR SEQ ID NO:1033:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1033:  
GBTCTCTGGBB TBTGBCCTT CCBTGGCGGT CCTGCTTGG 40
- (2) INFORMATION FOR SEQ ID NO:1034:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1034:  
TCTCCCTTGG GCTCTGGCTC CTTCTC 26
- (2) INFORMATION FOR SEQ ID NO:1035:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1035:  
TCTCTCTCCC TCTCTCTG T 21
- (2) INFORMATION FOR SEQ ID NO:1036:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1036:  
CGCCTCCGCC CTGGCTGCTG GGGTGGTGGT GC 32
- (2) INFORMATION FOR SEQ ID NO:1037:  
(i) SEQUENCE CHARACTERISTICS:



EPI-109

395

(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1037:  
TTTTGTTCTT CCTTGCTGCC 20

(2) INFORMATION FOR SEQ ID NO:1038:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1038:  
GCCCCGCTGC TTGTCTTCCT CG 22

(2) INFORMATION FOR SEQ ID NO:1039:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 50 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1039:  
CTCTGTCCCT CTCTCTCTGT BCTCCTCBGG CTCBCBTCB TCCTTG GGC 50

(2) INFORMATION FOR SEQ ID NO:1040:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1040:  
CTTGCTCCTG GGGGCCTCCT G 21

(2) INFORMATION FOR SEQ ID NO:1041:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1041:  
GTCCCTCCGG GTGTTCCCG C 21

(2) INFORMATION FOR SEQ ID NO:1042:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 81 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1042:  
GGGCCTGGCC TGGGGCBGGG GCCGCTBGG CGCGGCTCGC CBGGBCGGGC BGC GCCBGC B 60  
GCBGCBGBTT CBGCBCTCTG G 81

(2) INFORMATION FOR SEQ ID NO:1043:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1043:  
CTTGCTCCTG GGGGCCTCCT G 21

(2) INFORMATION FOR SEQ ID NO:1044:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1044:  
GTCCCTCTGG CTGTTCCCG C 21

(2) INFORMATION FOR SEQ ID NO:1045:  
(i) SEQUENCE CHARACTERISTICS:

EPI-109

396

(A) LENGTH: 90 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: Genomic DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1045:  
 CCTGGBCTGG GGCBBGGGCC GCGTBGGCGC GGCTCGCCBG GBCGGGCBGC GCCBGCBCGC 60  
 GCBGGCTCBG CBTCTGGCC BCGGBTTCC 90

(2) INFORMATION FOR SEQ ID NO:1046:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1046:  
 GGTGTGCGGG GCCTGGTGCC 20

(2) INFORMATION FOR SEQ ID NO:1047:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 23 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1047:  
 CCTGGGCCTC GGGTGCTGCC TGT 23

(2) INFORMATION FOR SEQ ID NO:1048:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1048:  
 GCGCTGCCTT CTTCTCCTGG 20

(2) INFORMATION FOR SEQ ID NO:1049:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 32 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1049:  
 GTCCTCGCCG GGGCCCTTGC TGCCCTGGCT GT 32

(2) INFORMATION FOR SEQ ID NO:1050:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 25 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1050:  
 GCCCTGGGG TCTGGTTTCG GCTGT 25

(2) INFORMATION FOR SEQ ID NO:1051:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 60 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: Genomic DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1051:  
 CCCCGBGCGG BCCBGTCCTC TCCBCBGCCT GTGTGBGTB GCCBTTCTCC TGCBGCCGBG 60

(2) INFORMATION FOR SEQ ID NO:1052:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 19 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: Genomic DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1052:  
 GGGCGCGGCC GBGCBTCGC 19

(2) INFORMATION FOR SEQ ID NO:1053:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1053:  
TTTGGGCTTT TCTCCTTTGG TT 22

(2) INFORMATION FOR SEQ ID NO:1054:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 60 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1054:  
TGBGCGCCBG GBCCGCGCBC BGCBCBGGG CGCGGGCGBG CBTCGCBGCG GCGGGCBGGG 60

(2) INFORMATION FOR SEQ ID NO:1055:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1055:  
GCCCTGCTGC TCTTTCTGCT 20

(2) INFORMATION FOR SEQ ID NO:1056:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1056:  
TCCCTTGCTG GGTGGGCC 19

(2) INFORMATION FOR SEQ ID NO:1057:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1057:  
TTGCTGCCCC TTCTGTCC 19

(2) INFORMATION FOR SEQ ID NO:1058:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1058:  
TTGCTGCCCC TTCTGTCC 19

(2) INFORMATION FOR SEQ ID NO:1059:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1059:  
TGTTTGCTGG TGTCTGCGC 19

(2) INFORMATION FOR SEQ ID NO:1060:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 60 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1060:  
CCCCBBCBGB BGBBGCBCBGB BBTTTGGGB BGTGBBCBGT TTTGGBCCB TGTTTCCTGT 60

(2) INFORMATION FOR SEQ ID NO:1061:  
(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1061:  
GCGCTCGGCC TGGTCCCGG 19
- (2) INFORMATION FOR SEQ ID NO:1062:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1062:  
GGGTCTCTC TTGTTGTTGC 20
- (2) INFORMATION FOR SEQ ID NO:1063:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1063:  
TTGCGCCTCC TGCTGGGGGT CC 22
- (2) INFORMATION FOR SEQ ID NO:1064:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1064:  
CTCTGTTCTT GTTTGGGGG C 21
- (2) INFORMATION FOR SEQ ID NO:1065:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1065:  
GGGCCCGGCC GTTGTCTTG 19
- (2) INFORMATION FOR SEQ ID NO:1066:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1066:  
GTTTGGGGGT TTCCGTTG 18
- (2) INFORMATION FOR SEQ ID NO:1067:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1067:  
GGGTTCTCCT GGCCCGGGCC TTGCC 26
- (2) INFORMATION FOR SEQ ID NO:1068:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1068:  
GGCCGTGGTC CCGGCTTCGT TGC 23
- (2) INFORMATION FOR SEQ ID NO:1069:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single

(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1069:  
CCTGTCTCCG TCTCGGCTCT TCTG 24

(2) INFORMATION FOR SEQ ID NO:1070:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1070:  
GGGCCTTGCG CTGTCTTTGG TG 22

(2) INFORMATION FOR SEQ ID NO:1071:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 60 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1071:  
GCBCCGTCCB GTGBTGGTGC GTBTCTTGTG GCTGCBGCGC TCGGCCTGGT CCCGGBGBGC 60

(2) INFORMATION FOR SEQ ID NO:1072:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1072:  
GCGCGGGCCG GGGGCTGCTG GG 22

(2) INFORMATION FOR SEQ ID NO:1073:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1073:  
GGTTGCCCCG GGGTGCCCC 19

(2) INFORMATION FOR SEQ ID NO:1074:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1074:  
GCCGCTGGGT GCCTCGTCC TCTGCGTC 29

(2) INFORMATION FOR SEQ ID NO:1075:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1075:  
GTGTCTCCTG GCTCTGGTTC CCC 23

(2) INFORMATION FOR SEQ ID NO:1076:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1076:  
GCTGCGCCCG TTGTCCTCTG GGGTGCCTT C 31

(2) INFORMATION FOR SEQ ID NO:1077:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1077:

GCTCCCGGGT CTGGTTCTTG TGT

23

## (2) INFORMATION FOR SEQ ID NO:1078:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1078:

TGGGGGTCCC TTTTGGGCC TGTGT

26

## (2) INFORMATION FOR SEQ ID NO:1079:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1079:

GGCGTGGCTT GTGTGTTCCG TTTC

24

## (2) INFORMATION FOR SEQ ID NO:1080:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1080:

TGCCCTGTCC TCCGGCGTCC C

21

## (2) INFORMATION FOR SEQ ID NO:1081:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 142 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: Genomic DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1081:

CGGBGCTCC CCGGGGCBGG BTGBCTTTTG BGGGGGBCBC BGBTGTCTGG GCBTTGCCBG  
GTCCTGGGBB CBGBGCCCCG BGCBBGCCB GGBGTGCGGG CBGCGCGGGC CGGGGGCTGC  
TGGGBGCCBT BGCBBGGCTG BG

60

120

142

## (2) INFORMATION FOR SEQ ID NO:1082:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1082:

CCTCTTTTCT GTTTTCC

19

## (2) INFORMATION FOR SEQ ID NO:1083:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1083:

CTCTGCCTTT GTTGGGTTT C

21

## (2) INFORMATION FOR SEQ ID NO:1084:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1084:

CTTCCTTTCT GCTTCTTC

19

## (2) INFORMATION FOR SEQ ID NO:1085:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1085:

EPI-109

401

CTGTGTCTCC TGTCTCCGCT TTTTCTTC

29

(2) INFORMATION FOR SEQ ID NO:1086:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1086:

GTCTTTGTTG TTTTCTCTTC CTG

24

(2) INFORMATION FOR SEQ ID NO:1087:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 130 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Genomic DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1087:

CTGBGCBBGB TBTCTBGBTT CTGGGGTGGT CTCGBTTTTB BBBGCTTGBG BBGCTGCBBB  
CBTTBTCCBB BGTBTBTTTG BGGCTCCBBG GBTCBCGBCC BTCTTCCCBG GCBTTTTBBG  
TTGCTGTCGT

60

120

130

(2) INFORMATION FOR SEQ ID NO:1088:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1088:

GTTCTTGGCT TCTTCTGTC

19

(2) INFORMATION FOR SEQ ID NO:1089:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1089:

CGTTGGCTTC TCGTTGTCCC

20

(2) INFORMATION FOR SEQ ID NO:1090:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1090:

TGTGGGCTTC TCGTTGTCCC

20

(2) INFORMATION FOR SEQ ID NO:1091:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1091:

CCCTTCGGGG GCTGGTGG

18

(2) INFORMATION FOR SEQ ID NO:1092:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1092:

GGCTGGTGG

9

(2) INFORMATION FOR SEQ ID NO:1093:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1093:

GGCCGTCCTT GCCTGCTGG

19

## (2) INFORMATION FOR SEQ ID NO:1094:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 41 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1094:

TTTTCTCTTT CGCTTTCTTT TCGTCTCCTG TTCCTCCTTT T

41

## (2) INFORMATION FOR SEQ ID NO:1095:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1095:

TTGCTGTTTT TTCTCCTTCT TCTCTCCTTT CTTTTC

36

## (2) INFORMATION FOR SEQ ID NO:1096:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 41 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1096:

TTTTCTCTTT CGCTTTCTTT TCGTCTCCTG TTCCTCCTTT T

41

## (2) INFORMATION FOR SEQ ID NO:1097:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1097:

TTGCTGTTTT TTCTCCTTCT TCTCTCCTTT CTTTTC

36

## (2) INFORMATION FOR SEQ ID NO:1098:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1098:

CTCTGTCTTG TTCTGGTCCT TCGTGGGGCT CTG

33

## (2) INFORMATION FOR SEQ ID NO:1099:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1099:

TGTCGCGTGG GTGCGGCCGT GGCC

24

## (2) INFORMATION FOR SEQ ID NO:1100:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 69 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: Genomic DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1100:

GGCGGBCCBG GBGTTGBGC BGGBCBGBB CGGGCBGGCG GCTCBTGT TT GGBTCGGCBG  
GBGGCBCTC

60

69

## (2) INFORMATION FOR SEQ ID NO:1101:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1101:

TCTGGGGTGT CCTG

14



## (2) INFORMATION FOR SEQ ID NO:1102:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 14 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1102:

GCCTTCGTGG TTCC

14

## (2) INFORMATION FOR SEQ ID NO:1103:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1103:

TCTTCCTTCG TTTGC

15

## (2) INFORMATION FOR SEQ ID NO:1104:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 19 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1104:

GGCTGCGCTC CTGCCCCGC

19

## (2) INFORMATION FOR SEQ ID NO:1105:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 19 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1105:

GGCTGCGCTC CTGCCCCGC

19

## (2) INFORMATION FOR SEQ ID NO:1106:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 17 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1106:

CTCTTTCCCG GGCTCTT

17

## (2) INFORMATION FOR SEQ ID NO:1107:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 17 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1107:

GCGCTGGGGG GTGCTCC

17

## (2) INFORMATION FOR SEQ ID NO:1108:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 28 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1108:

CGTGTGTTTG CGCCTCCTC CTGGTCGC

28

## (2) INFORMATION FOR SEQ ID NO:1109:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 14 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1109:

GCTTGTGTT TTGG

14

## (2) INFORMATION FOR SEQ ID NO:1110:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1110:  
GGCCGGCTTT GCCCGCTCC C 21

(2) INFORMATION FOR SEQ ID NO:1111:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1111:  
GGCGCCTGGC CCGGCC 16

(2) INFORMATION FOR SEQ ID NO:1112:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1112:  
TTCCTGGGCT GCGTGGC 18

(2) INFORMATION FOR SEQ ID NO:1113:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1113:  
GTTCTGTTCT TCTTCCTGC 20

(2) INFORMATION FOR SEQ ID NO:1114:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 78 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1114:  
GCBGGBGBCB GGGCBGGCG BTCBGBGCB GCGTGBGCCB BBGGBGBCC BTCGGGBBCG 60  
CBGCTCCGB BCGCBGB 78

(2) INFORMATION FOR SEQ ID NO:1115:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1115:  
CTCTGGTTGG CTTCTTC 18

(2) INFORMATION FOR SEQ ID NO:1116:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 70 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1116:  
GCCGGCBCT GCTBGBGGB BGBBCBGBGG GGGBGCBGT TGGGBGGTGB GBCCCBTTBB 60  
TBGGTGTCB 70

(2) INFORMATION FOR SEQ ID NO:1117:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1117:  
TCTGCGGCC CCTGCTCC 18

(2) INFORMATION FOR SEQ ID NO:1118:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1118:  
CGCCCGGCTT CTCT 14

(2) INFORMATION FOR SEQ ID NO:1119:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1119:  
CGTGTGGGCT TCGG 14

(2) INFORMATION FOR SEQ ID NO:1120:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 21 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1120:  
CCCCGCGCCT CCGTTGTTCT C 21

(2) INFORMATION FOR SEQ ID NO:1121:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 15 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1121:  
TGCTCGCTGG GCTTG 15

(2) INFORMATION FOR SEQ ID NO:1122:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 23 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1122:  
GGTTTCCTGG GGCCCTGGGT TTC 23

(2) INFORMATION FOR SEQ ID NO:1123:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1123:  
TCTGCCGGGT CGTTTTTC 17

(2) INFORMATION FOR SEQ ID NO:1124:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1124:  
GGGTGCTGGC TCGG 14

(2) INFORMATION FOR SEQ ID NO:1125:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1125:  
CTTGGTGCTG GGGCTCC 17

(2) INFORMATION FOR SEQ ID NO:1126:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 22 base pairs

(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1126:  
GGCGGCTGCG GGCTGGGTTG GG 22

(2) INFORMATION FOR SEQ ID NO:1127:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1127:  
CTTGCTGGT TCCTGGCCTC GGG 23

(2) INFORMATION FOR SEQ ID NO:1128:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1128:  
CCTCCTCCTC CTCCTCGCTC CCTTTTCTT CCTCT 35

(2) INFORMATION FOR SEQ ID NO:1129:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1129:  
TCCCTGCTGC TCTC 14

(2) INFORMATION FOR SEQ ID NO:1130:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1130:  
TGCCCTCCCT TCCCTCCTGG 20

(2) INFORMATION FOR SEQ ID NO:1131:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1131:  
GGTGCCTCCT TGGGCCCTGC 20

(2) INFORMATION FOR SEQ ID NO:1132:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1132:  
GGCTGCTCCT TGCCCC 16

(2) INFORMATION FOR SEQ ID NO:1133:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1133:  
CTCTGGGTCG GGCTGGC 17

(2) INFORMATION FOR SEQ ID NO:1134:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1134:  
GGGGCGTCTC TGTGC 15

(2) INFORMATION FOR SEQ ID NO:1135:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1135:  
CTGGCCTGGG TGCC 14

(2) INFORMATION FOR SEQ ID NO:1136:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1136:  
GCCTCTCCTG GGGGGGTGGC TCCCTGTCC 29

(2) INFORMATION FOR SEQ ID NO:1137:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1137:  
CCTTTTCCCC CGGCTCC 17

(2) INFORMATION FOR SEQ ID NO:1138:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1138:  
GTGGGGGCTT TGGC 14

(2) INFORMATION FOR SEQ ID NO:1139:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1139:  
GGGGGTCTGT GGCCTGCTCC TGGGG 25

(2) INFORMATION FOR SEQ ID NO:1140:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1140:  
AGGGGTCTGG GGCCCTC 17

(2) INFORMATION FOR SEQ ID NO:1141:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1141:  
TTTTGGGGGT CTGGCTTG 18

(2) INFORMATION FOR SEQ ID NO:1142:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1142:  
GCCTGGCTGC CTTCC 15

EPI-109

408

(2) INFORMATION FOR SEQ ID NO:1143:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1143:  
GGGGCCTGCC GTGGGGC 17

(2) INFORMATION FOR SEQ ID NO:1144:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1144:  
TGTCCTCTGT TGCTCCCCTT 20

(2) INFORMATION FOR SEQ ID NO:1145:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1145:  
TGCTGCTGT CTGG 14

(2) INFORMATION FOR SEQ ID NO:1146:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1146:  
GGTTCGCCGCTTCCCT 16

(2) INFORMATION FOR SEQ ID NO:1147:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 100 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1147:  
GTTCCAGAG CTTGCCACCT GCAGCAGGAC CAGGCAGCTC ACAGGGAACA GGAGCCCAGA 60  
GCAAAGCCAC CCCATTGGGA GATGCCAAGG CACCAGGCTG 100

(2) INFORMATION FOR SEQ ID NO:1148:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 100 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1148:  
GTTCCCBGBG CTTGCCBCCT GCBGCBGBGC CBGGCBGCTC BCBGGGBBCB GGBGCCCCBG 60  
GCBGBGCCBC CCCBTTGGGB GBTGCCBGG CBCCBGGCTG 100

(2) INFORMATION FOR SEQ ID NO:1149:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1149:  
TCCCTGTTTC CCCCTTT 18

(2) INFORMATION FOR SEQ ID NO:1150:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1150:  
CGTTCTGCGT TTGCCTTTGG C 21

EPI-109

409

(2) INFORMATION FOR SEQ ID NO:1151:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1151:  
GTTTTTTGTT TGTTTTCT 18

(2) INFORMATION FOR SEQ ID NO:1152:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1152:  
CTCTCCGTCT TTCTTCTCC 19

(2) INFORMATION FOR SEQ ID NO:1153:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1153:  
CCTCCTGCCT GTGTCCCTGC TCCCC 25

(2) INFORMATION FOR SEQ ID NO:1154:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1154:  
GAGGGTTTCT GGCTTCCTCT CT 22

(2) INFORMATION FOR SEQ ID NO:1155:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1155:  
TGCTCTCTG TCCTTTTGTT 20

(2) INFORMATION FOR SEQ ID NO:1156:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1156:  
TGTGTGCGG CCTGGTGCTG CCCTGCCCGG GG 32

(2) INFORMATION FOR SEQ ID NO:1157:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 89 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1157:  
GTGGGBBTTT CTGTGGGGBT GGCBTBCBG TBGGCBGCTC CBBGBGCTBG CBBBCTCBBB 60  
TGCBBBGC B TCCTCBTGGC TCTGBBGC 89

(2) INFORMATION FOR SEQ ID NO:1158:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1158:  
GTGTGTCTTT GCTGT 15

(2) INFORMATION FOR SEQ ID NO:1159:

EPI-109

410

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1159:  
TTCCTTTGCT CTTG 14
- (2) INFORMATION FOR SEQ ID NO:1160:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1160:  
GTGTGTCTTT GCTGT 15
- (2) INFORMATION FOR SEQ ID NO:1161:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1161:  
GCCCTGCCTC TCTGC 15
- (2) INFORMATION FOR SEQ ID NO:1162:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1162:  
GGGGGTGGCT TCCTGCC 17
- (2) INFORMATION FOR SEQ ID NO:1163:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1163:  
GCGTCTCTGG GCCGTCCC 18
- (2) INFORMATION FOR SEQ ID NO:1164:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1164:  
GTCCCTCGGC CCCGCGCCGC GTCGGCTCC TCTCCC 36
- (2) INFORMATION FOR SEQ ID NO:1165:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1165:  
TCTGGCCCG CTC 13
- (2) INFORMATION FOR SEQ ID NO:1166:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1166:  
GGGGCGGGGC GGGCGGTGG GCGGGC 26
- (2) INFORMATION FOR SEQ ID NO:1167:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid



EPI-109

411

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1167:  
GGCGCTGCCC TGCGC 15

(2) INFORMATION FOR SEQ ID NO:1168:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1168:  
TGCTGGCCGT CGGCTGCGCG CTGCTGGCTG CCCT 34

(2) INFORMATION FOR SEQ ID NO:1169:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1169:  
TGCTGGCCGT CGGCTGCGCG CTGCTGGCTG CCCT 34

(2) INFORMATION FOR SEQ ID NO:1170:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1170:  
GCTGGCCGCG CCGGG 15

(2) INFORMATION FOR SEQ ID NO:1171:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1171:  
GCCTGTCCGC CTCTGCGGG 19

(2) INFORMATION FOR SEQ ID NO:1172:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1172:  
CGCTGTCTCC TGGC 14

(2) INFORMATION FOR SEQ ID NO:1173:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1173:  
TTGTCTCCG GCTCT 15

(2) INFORMATION FOR SEQ ID NO:1174:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1174:  
TCTGCTGGGG TGGG 14

(2) INFORMATION FOR SEQ ID NO:1175:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1175:

EPI-109

412

GCTGGGCGGC CGGCCCGGT

19

(2) INFORMATION FOR SEQ ID NO:1176:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1176:

GCTGGGGCTC CTCGGGGG

19

(2) INFORMATION FOR SEQ ID NO:1177:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1177:

GGGGGCTCTT CCGG

14

(2) INFORMATION FOR SEQ ID NO:1178:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 16 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1178:

GCTGTCTCCC TCCGGG

16

(2) INFORMATION FOR SEQ ID NO:1179:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 16 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1179:

GCGGGGGTTT CTGGCC

16

(2) INFORMATION FOR SEQ ID NO:1180:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1180:

GTGGGGGTCT TGCC

14

(2) INFORMATION FOR SEQ ID NO:1181:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1181:

TGGCCTCCGG GCTCC

15

(2) INFORMATION FOR SEQ ID NO:1182:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1182:

TGCTTGCTT GCCTTCCTC

20

(2) INFORMATION FOR SEQ ID NO:1183:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1183:

TCTGGTCGGT TGTGGCTCG

19

(2) INFORMATION FOR SEQ ID NO:1184:

EPI-109

413

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1184:  
GGGCTCCGTG GGTCCCTGGC 20
- (2) INFORMATION FOR SEQ ID NO:1185:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1185:  
GCCCCGTTTGT GTTTGTGTC 18
- (2) INFORMATION FOR SEQ ID NO:1186:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1186:  
TTTTCCCCTG GCGT 14
- (2) INFORMATION FOR SEQ ID NO:1187:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1187:  
CCCTGTGCCC CTCTCCTCTC CTCCTCTGC TTCTC 35
- (2) INFORMATION FOR SEQ ID NO:1188:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1188:  
GCTCTCCTTT GTGGG 15
- (2) INFORMATION FOR SEQ ID NO:1189:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1189:  
GCCCTCCCTG CTGCT 15
- (2) INFORMATION FOR SEQ ID NO:1190:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1190:  
CTTGTTTTG GGCT 14
- (2) INFORMATION FOR SEQ ID NO:1191:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1191:  
TTTTTCTCT TCCTCCTTT TC 22
- (2) INFORMATION FOR SEQ ID NO:1192:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1192:  
GTGCGTGGGC CTCC

14

(2) INFORMATION FOR SEQ ID NO:1193:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1193:  
CCCGGCCG

8

(2) INFORMATION FOR SEQ ID NO:1194:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 150 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1194:  
GCACGCCTCT TGCCACCTCC TGCGCAGGGC AGCGCCTTGG GGCCAGCGCC GCTCCCGGCG 60  
CGGCCAGCAG GGCAGCCAGC AGCGCGCAGC CGACGGCCAG CATGCTTCCT CCTCGGCTAC 120  
CACTCCATGG TCCCGCAGAG GCGGACAGGC 150

(2) INFORMATION FOR SEQ ID NO:1195:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1195:  
GGCCBGCBGG

10

(2) INFORMATION FOR SEQ ID NO:1196:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 150 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1196:  
GCBGCGCTCT TGCCBCCTCC TGCGCBGGGC BGCGCCTTGG GGCCBGCGCC GCTCCCGGCG 60  
CGGCCBGCBG GGCBCBGCBG BCGCGCBGC CGBCGGCCBG CBTGCTTCCT CCTCGGCTBC 120  
CBCTCCBTGG TCCGCBGBG GCGGBCBGGC 150

(2) INFORMATION FOR SEQ ID NO:1197:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1197:  
GCTTCTCTTT CGTTCCCGGT GGGCTCG

27

(2) INFORMATION FOR SEQ ID NO:1198:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1198:  
GTGGCTGTCT GTGTGGGGCG GCT

23

(2) INFORMATION FOR SEQ ID NO:1199:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1199:  
GTGCCCTCTT GCTGCTTC

19

- (2) INFORMATION FOR SEQ ID NO:1200:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 bas pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1200:  
GATTCTTTGC CTTTTCTGC 20
- (2) INFORMATION FOR SEQ ID NO:1201:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 22 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1201:  
GCTTGTGTGC TCTGCTGTCT CT 22
- (2) INFORMATION FOR SEQ ID NO:1202:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 37 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1202:  
TGTTTCCTTC CGGTGGTTTC TTCCTGGCTC TTGTCCT 37
- (2) INFORMATION FOR SEQ ID NO:1203:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1203:  
TTCTCTTGGC CCTTGGC 17
- (2) INFORMATION FOR SEQ ID NO:1204:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 39 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1204:  
TGGTGGGGCT GGGGCTCCGG GGTCTCTGCC CCTCCGTGC 39
- (2) INFORMATION FOR SEQ ID NO:1205:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 28 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1205:  
CGCGTGGGGC CGCGCTCGCC GGCCCCC 28
- (2) INFORMATION FOR SEQ ID NO:1206:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 24 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1206:  
CCTGCCGGGT GGGTCCCCG CGCG 24
- (2) INFORMATION FOR SEQ ID NO:1207:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1207:  
CGCCGGCCTG CCGGCCCTC 20
- (2) INFORMATION FOR SEQ ID NO:1208:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 39 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1208:  
GTGGGTCTCTG CTGGCCGGGT CCGGGTCCCG GGGGTGGGG

39

(2) INFORMATION FOR SEQ ID NO:1209:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Genomic DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1209:  
CGCGBGTCTG CGGCCBGGG TC

22

(2) INFORMATION FOR SEQ ID NO:1210:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Genomic DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1210:  
GGCCTCCBCC BGGGBCBTG

19

(2) INFORMATION FOR SEQ ID NO:1211:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1211:  
GTCCTTCTTG TCCGCTGCC

19

(2) INFORMATION FOR SEQ ID NO:1212:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1212:  
TCTCTGGGGT TTTCGGTCTG GGTGG

25

(2) INFORMATION FOR SEQ ID NO:1213:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1213:  
GCTTCTCTCC TGGGGCTGCT GCTG

24

(2) INFORMATION FOR SEQ ID NO:1214:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1214:  
GGCTCTTCTT TTTGTTCTG GCCTGGTG

28

(2) INFORMATION FOR SEQ ID NO:1215:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1215:  
CTCTCTCGTG CCCTTTCC

18

(2) INFORMATION FOR SEQ ID NO:1216:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1216:  
CTTGGGTGTC TTGTTTTGT 20

(2) INFORMATION FOR SEQ ID NO:1217:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1217:  
GGCCTCCBCC BGGGBCBTG 19

(2) INFORMATION FOR SEQ ID NO:1218:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1218:  
GTGGGGCCTG CTCTCCCGC CTCCG 25

(2) INFORMATION FOR SEQ ID NO:1219:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1219:  
TGTGTTGCTG GGTGTTTCC CGTCTCTGG 29

(2) INFORMATION FOR SEQ ID NO:1220:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1220:  
TCTGCCTTCG GGGGTCGT 18

(2) INFORMATION FOR SEQ ID NO:1221:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1221:  
GGGTCTCBT GGCTGGGG 18

(2) INFORMATION FOR SEQ ID NO:1222:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1222:  
GCCTGGGCCT GCBGGGCC 18

(2) INFORMATION FOR SEQ ID NO:1223:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1223:  
GCTCTGCCT GGBGTGGCTC 20

(2) INFORMATION FOR SEQ ID NO:1224:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs

(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1224:  
GCCCBGBGTC TTCCCTGGT 19

(2) INFORMATION FOR SEQ ID NO:1225:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1225:  
GGGTCCTCBT GGCTGGGGTC 20

(2) INFORMATION FOR SEQ ID NO:1226:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1226:  
CCTCTCTCCC GTCCT 15

(2) INFORMATION FOR SEQ ID NO:1227:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1227:  
GTCTTTGTTT CTGGGCTCGT GCC 23

(2) INFORMATION FOR SEQ ID NO:1228:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1228:  
CCBTCCCGGC TTCTCTCTGG TTCC 24

(2) INFORMATION FOR SEQ ID NO:1229:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1229:  
GTCCTCTGTG GTGTTTGG 18

(2) INFORMATION FOR SEQ ID NO:1230:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1230:  
CCCTGCTTCC TTTTGCCTGT T 21

(2) INFORMATION FOR SEQ ID NO:1231:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 85 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1231:  
GAGGGGGCAG CAGTTGGGCC CCAAAGGCC TCTCGTTCAC CTTCTGGCAC GGAGTTGCAT 60  
CCCCATAGTC AAATCTGTG GTCGT 85

(2) INFORMATION FOR SEQ ID NO:1232:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 59 base pairs



(B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1232:  
 GTCATAGTCC TCTGTGGTGT TTGGAGTTTC CATCCCGGCT TCTCTCTGGT TCCAAGGGA 59

(2) INFORMATION FOR SEQ ID NO:1233:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 86 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: Genomic DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1233:  
 GBGGGGGCBG CBGTTGGGCC CCBBGGCCCC TCTCGTTCBC CTTCTGGCBC GGBGTTGCBT 60  
 CCCCBTBGTC BBBCTCTGTG GTCGTG 86

(2) INFORMATION FOR SEQ ID NO:1234:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 58 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: Genomic DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1234:  
 TCBTBGTCCT CTGTGGTGTG TGGBGTTTCC BTCCCGGCTT CTCTCTGGTT CCBBGGGB 58

(2) INFORMATION FOR SEQ ID NO:1235:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 84 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: Genomic DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1235:  
 GGGCBGCGGG CBGTGGGCGG GCBBTGTBGG CBBBGCBCB GGGTGTGGTG TCCGBGGBBT 60  
 BTGGGGBGGC BBTGCBGGB GCGC 84

(2) INFORMATION FOR SEQ ID NO:1236:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 78 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: Genomic DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1236:  
 BGBGGGCBGT BGCBBTGBGG BTGBCBGCB GCGTGCCGC GGBGBCCTTC BTGGTBCCTG 60  
 TGGBGBGGCT GTCGGBGG 78

(2) INFORMATION FOR SEQ ID NO:1237:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 70 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1237:  
 GGGTGTGGTG TCCGCTTGGC GGTCTTTTCG GGTGTTTCTT CTCTGGGTTG GCCTGCTGCT 60  
 CGTCGTGGTC 70

(2) INFORMATION FOR SEQ ID NO:1238:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 71 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1238:  
 GCTCCGCTCC CGGGTTCGTC TCGTCTGTC GCCCTTCCT TCCTGTCTGT GTTCCTCCCT 60  
 TCCTTGCTC T 71

(2) INFORMATION FOR SEQ ID NO:1239:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 14 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1239:  
GGGTGTGGTG TCCG 14

(2) INFORMATION FOR SEQ ID NO:1240:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1240:  
CTTGGCGGTT CTTTCGGGTG 20

(2) INFORMATION FOR SEQ ID NO:1241:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1241:  
TTTCTTCTCT GGGTTGGC 18

(2) INFORMATION FOR SEQ ID NO:1242:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1242:  
CTGCTGCTCG TCGTGGTC 18

(2) INFORMATION FOR SEQ ID NO:1243:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1243:  
GCTCCGCTCC CGGGTTC 17

(2) INFORMATION FOR SEQ ID NO:1244:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1244:  
GTCTCGCTCT GTCGCCC 17

(2) INFORMATION FOR SEQ ID NO:1245:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1245:  
CTTCCTTCCT TGTC 14

(2) INFORMATION FOR SEQ ID NO:1246:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1246:  
GTGTTCTCC CTTCTTGCC TCT 23

(2) INFORMATION FOR SEQ ID NO:1247:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1247:  
GTTCBTGGTG GCTBGGTGGG GC 22

- (2) INFORMATION FOR SEQ ID NO:1248:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 26 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1248:  
 GCTGCCCGGC GGGGTGTGCG CTTGGC 26
- (2) INFORMATION FOR SEQ ID NO:1249:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 30 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1249:  
 GCTCCCGTGC TCGGTTCTCT GTCTCCCGGT 30
- (2) INFORMATION FOR SEQ ID NO:1250:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 22 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1250:  
 CCCCTTTGC CTGGCGTCTC GG 22
- (2) INFORMATION FOR SEQ ID NO:1251:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 29 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1251:  
 GCCTTCGTCC TCTTCTCTT CTTCTTCC 29
- (2) INFORMATION FOR SEQ ID NO:1252:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 43 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1252:  
 GCTCCGTGGG GGCTGCTTG TGGGGGCCTG TGCCTCGGG TCC 43
- (2) INFORMATION FOR SEQ ID NO:1253:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1253:  
 CGGGGCTTCT GGCCCTTGCC 20
- (2) INFORMATION FOR SEQ ID NO:1254:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 22 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1254:  
 GTTCATGGTG GCTAGGTGGG GC 22
- (2) INFORMATION FOR SEQ ID NO:1255:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 24 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: Genomic DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1255:  
 GGGGTGGGTB GGCCGTGTCT GGGG 24
- (2) INFORMATION FOR SEQ ID NO:1256:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1256:  
GTGGCCBTG TTGGTTGCC 19
- (2) INFORMATION FOR SEQ ID NO:1257:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1257:  
TCTTGGTGGT GCGCCGGGC 19
- (2) INFORMATION FOR SEQ ID NO:1258:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 47 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1258:  
GCGTCTTGGC TTTCTTCTCC TTCGGGCCCT CGGGCCGGTG CTTGTGG 47
- (2) INFORMATION FOR SEQ ID NO:1259:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 38 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1259:  
GCTCCTCCCG GCGGCCTCC CCGGGCGGG GCTTCTTG 38
- (2) INFORMATION FOR SEQ ID NO:1260:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1260:  
GCGCTGGCGG GGGGCCTCC TCC 23
- (2) INFORMATION FOR SEQ ID NO:1261:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1261:  
GCTCTGTGGC TGGGCGTTCC TTGGTGTCT GGGTGGC 37
- (2) INFORMATION FOR SEQ ID NO:1262:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1262:  
TGGCGGGCGT GGTGGCCTCT GTGGTGG 27
- (2) INFORMATION FOR SEQ ID NO:1263:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1263:  
GGGCCCCGCG CTGCBGGGG 19
- (2) INFORMATION FOR SEQ ID NO:1264:  
(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1264:  
TTGCCTGTCT GCTTCGTC 18
- (2) INFORMATION FOR SEQ ID NO:1265:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1265:  
CTTTGCGCTC CCGGGCCGCC 20
- (2) INFORMATION FOR SEQ ID NO:1266:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1266:  
GGGGTGGGTA GGCCGTGTCT GGGG 24
- (2) INFORMATION FOR SEQ ID NO:1267:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1267:  
GTTGGCCATG TTGGTTGCC 19
- (2) INFORMATION FOR SEQ ID NO:1268:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1268:  
GGGCCCCGGG CTGCAGGGG 19
- (2) INFORMATION FOR SEQ ID NO:1269:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1269:  
CGGTTTCCTT TGCGGTC 17
- (2) INFORMATION FOR SEQ ID NO:1270:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1270:  
TTGGCCCCGG CTCCGGGTG 19
- (2) INFORMATION FOR SEQ ID NO:1271:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1271:  
CCCCCCCCCG CGCCGGCCGC CGC 23
- (2) INFORMATION FOR SEQ ID NO:1272:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single

(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1272:  
CCCGCCGGGC TGTCCCCGCC CCGCCCC 27

(2) INFORMATION FOR SEQ ID NO:1273:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1273:  
GGCCCCGGGGC GCGGGGG 17

(2) INFORMATION FOR SEQ ID NO:1274:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1274:  
CGGCCCTCCC GCCCCTCTGG 20

(2) INFORMATION FOR SEQ ID NO:1275:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1275:  
GCCGGCGCGG GCGTCGG 17

(2) INFORMATION FOR SEQ ID NO:1276:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 37 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1276:  
CCGCTCGCGC CTGGGGTTCC CTCTCCTCCC CCTGTGC 37

(2) INFORMATION FOR SEQ ID NO:1277:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1277:  
GCCTGCCTCT TGCTCTTC 18

(2) INFORMATION FOR SEQ ID NO:1278:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1278:  
TGCGTCCGCT GCCTTCTCCC 20

(2) INFORMATION FOR SEQ ID NO:1279:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1279:  
CTCTCCTCGG CCGTTGCCTG TGC 23

(2) INFORMATION FOR SEQ ID NO:1280:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: singl  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1280:  
TGTCGTCCT GTCGCCCTTC CGTGGTGC 28

- (2) INFORMATION FOR SEQ ID NO:1281:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 19 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1281:  
TGTTGTCTCT TCTGCCCTC 19
- (2) INFORMATION FOR SEQ ID NO:1282:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 24 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1282:  
GGTGTGCTGG TGCTGGTGGT GGTG 24
- (2) INFORMATION FOR SEQ ID NO:1283:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 18 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1283:  
CCTCTGCCCG TGCTCGCC 18
- (2) INFORMATION FOR SEQ ID NO:1284:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 24 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1284:  
CTGCCTGGGC TGGCCTCTTC GGGT 24
- (2) INFORMATION FOR SEQ ID NO:1285:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 30 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1285:  
GTGGCTTTGG GGCTCTCTTG GTTGCCCTTT 30
- (2) INFORMATION FOR SEQ ID NO:1286:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 35 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1286:  
CTTCTCGTGG TGCCTCTCCT CCCTGGCTTG GTCGT 35
- (2) INFORMATION FOR SEQ ID NO:1287:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 24 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1287:  
TGTCTGGGGT GGTGCTCCTC TCCC 24
- (2) INFORMATION FOR SEQ ID NO:1288:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1288:  
TTTCCTGCT GGCCGTTTGT 20
- (2) INFORMATION FOR SEQ ID NO:1289:  
(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1289:  
CCTGTTTCT GTCTTCCTCT 20
- (2) INFORMATION FOR SEQ ID NO:1290:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1290:  
TTCCTCCTGT TTCTCCGT 18
- (2) INFORMATION FOR SEQ ID NO:1291:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 28 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1291:  
TTGGCTTGCT GCTTGCGGGG CTGTCTCC 28
- (2) INFORMATION FOR SEQ ID NO:1292:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 21 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1292:  
CTTGCCCCTG TGGGCTTCC C 21
- (2) INFORMATION FOR SEQ ID NO:1293:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 25 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1293:  
TGGTCCGGTC TTCTCCTTGG GGGTC 25
- (2) INFORMATION FOR SEQ ID NO:1294:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1294:  
GCCCTTCTTG GTGGGCTG 18
- (2) INFORMATION FOR SEQ ID NO:1295:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 22 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1295:  
GCTCGTCTGT CTTTTTCCTT CC 22
- (2) INFORMATION FOR SEQ ID NO:1296:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 34 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1296:  
TGGGGGTGGC CGTTGTGGGC GGTGTGGTCC GCCT 34
- (2) INFORMATION FOR SEQ ID NO:1297:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 18 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single



(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1297:  
TGCCTCTGCT GGTCTTTC 18

(2) INFORMATION FOR SEQ ID NO:1298:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1298:  
GTGCTCCGGT GGCTTTTT 18

(2) INFORMATION FOR SEQ ID NO:1299:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1299:  
GCTTGTGTGC TCTGCTGTCT CTG 23

(2) INFORMATION FOR SEQ ID NO:1300:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1300:  
TTCCTTCCGG TGGTTTCTTC CTGGCTCTTG TCCT 34

(2) INFORMATION FOR SEQ ID NO:1301:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1301:  
TTCTCTTGGC CCTTGGCCC 19

(2) INFORMATION FOR SEQ ID NO:1302:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1302:  
TGGCTCGGTG CTTCTGCCCC 20

(2) INFORMATION FOR SEQ ID NO:1303:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1303:  
TGTTGTTGCG GCGCTC 16

(2) INFORMATION FOR SEQ ID NO:1304:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1304:  
GGTTGGTGTG GCCCCTG 17

(2) INFORMATION FOR SEQ ID NO:1305:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1305:  
TGGTGCTTCG TTTCC 15

- (2) INFORMATION FOR SEQ ID NO:1306:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 18 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1306:  
CCCTCTTTCT CTTTGTTTC 18
- (2) INFORMATION FOR SEQ ID NO:1307:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 15 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1307:  
GGGGGTTCTT GTGGC 15
- (2) INFORMATION FOR SEQ ID NO:1308:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 19 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1308:  
GGGCTGCTTG TCTCGTTCC 19
- (2) INFORMATION FOR SEQ ID NO:1309:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1309:  
GGTCCBGCCB TGGGTCTGGG 20
- (2) INFORMATION FOR SEQ ID NO:1310:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1310:  
GGCTGGGCTG CBGGCTCCGG 20
- (2) INFORMATION FOR SEQ ID NO:1311:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 27 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1311:  
GCGGGCGGGT GCGGGCTGCG TGCTGGG 27
- (2) INFORMATION FOR SEQ ID NO:1312:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1312:  
GGCTGCCCGG CAGGCCCTGC 20
- (2) INFORMATION FOR SEQ ID NO:1313:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 115 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1313:  
GCBCCGCTG GBGCCCTGGG GCCCCCTGT CTTCTTGGGG BGCCTCCT CGGCCBGCTC 60

CBCGTCCCCG BTCBTGCTTT CBGTGCTCBT GGTGTCCTTT CCBGGGGGBG GBGGG

115

(2) INFORMATION FOR SEQ ID NO:1314:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 331 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Genomic DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1314:

GCTGGTCCTC	TGCTGTCCTT	GCTGGTGCTC	BTGGTGCTCT	TTCCGCCCTG	GGGCCCCCT	60
GTCTTCTTGG	GGCCTCTTCC	CTCTGGGGGC	CGTCTCTCTC	CCTCTCTTGC	GTCTCTCTCT	120
TTCTCTCTCT	CTCTTCCCCT	TTCCCGCTCT	TTCTGTCTCG	GTGTCTGGTT	TTCTCTCTCC	180
GCTGGCTGCC	TGTCTGGCCT	GCGCTCTTGG	CCTGTGCTGT	TCCTCTCCG	GTTCTGTCC	240
TCTCTGTCTG	TCGCCCCCTC	TGGGTCTCC	CTCTGGCGTG	GTGGTCTTGT	TGCTTGGGCT	300
GGGCTCCGTG	TCTCCBTGC	TCBTGGTGTC	C			331

(2) INFORMATION FOR SEQ ID NO:1315:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 373 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Genomic DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1315:

GCTGBGGGBG	CGTCTGCTGG	CGCTGGTCCT	CTGCTGTCCT	TGCTGGTGCT	CBTGGTGTCC	60
TTTCCGCCCT	GGGGCCCCC	TGTCTTCTTG	GGGCTCTTTC	CCTCTGGGGG	CCGTCTCTCT	120
CCCTCTCTTG	CGTCTCTCTC	TTCTCTCTC	TCTCTTCCCC	TTTCCCGCTC	TTCTGTCTC	180
GGTGTCTGGT	TTTCTCTCTC	CGCTGGCTGC	CTGTCTGGCC	TGCGCTCTTG	GCCTGTGCTG	240
TTCCTCTCC	GGTTCCTGTC	CTCTCTGTCT	GTCGCCCCCT	CTGGGGTCTC	CCTCTGGCGT	300
GGTGTCTTG	TTGCTTGGGC	TGGGCTCCGT	GTCTCCBTG	CTCBTGGTGT	CCGCTGBGGG	360
BGGCTCTGCT	GGC					373

(2) INFORMATION FOR SEQ ID NO:1316:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1316:

GCCCCGTCTG CTGCTCCTCG TGCCG

25

(2) INFORMATION FOR SEQ ID NO:1317:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1317:

CCTCGTCCTT CATGGTACCG TCGGTGTGGT GGC

33

(2) INFORMATION FOR SEQ ID NO:1318:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1318:

CTCGGGTGGG CCGGTGGTG

19

(2) INFORMATION FOR SEQ ID NO:1319:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1319:

GGGCGCGCGC GCTCGCGT

18

(2) INFORMATION FOR SEQ ID NO:1320:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 49 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1320:  
GGCTCCGGCT CTTCTTTCCC GGCTCCGTCG GCGCGGGGC CTTGGTCTC 49

(2) INFORMATION FOR SEQ ID NO:1321:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1321:  
CCTCGTCCTT CBTGGTBCCG 20

(2) INFORMATION FOR SEQ ID NO:1322:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1322:  
CCCGTTCGCC TGGCGC 16

(2) INFORMATION FOR SEQ ID NO:1323:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1323:  
GCGCTGCGGG TTCCTC 16

(2) INFORMATION FOR SEQ ID NO:1324:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1324:  
GTGGGTTTCT CCGCGCGTT CTC 23

(2) INFORMATION FOR SEQ ID NO:1325:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1325:  
CGGTCTGTTG CCTTTGTGGG 20

(2) INFORMATION FOR SEQ ID NO:1326:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1326:  
CTTCTGTCT TTTTGGCT 18

(2) INFORMATION FOR SEQ ID NO:1327:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1327:  
GTTCTTTTCC TGCTTGGC 18

(2) INFORMATION FOR SEQ ID NO:1328:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1328:  
GTCTTTTCCT TTCTT 15

- (2) INFORMATION FOR SEQ ID NO:1329:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 18 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1329:  
TGTGCTCGGT TGTGGGTC 18
- (2) INFORMATION FOR SEQ ID NO:1330:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 15 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1330:  
CGCTGGTCCT TTGCC 15
- (2) INFORMATION FOR SEQ ID NO:1331:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 16 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1331:  
CTGTGTGTTT CTGCTG 16
- (2) INFORMATION FOR SEQ ID NO:1332:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 16 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1332:  
CCCGTTCGCC TGGCGC 16
- (2) INFORMATION FOR SEQ ID NO:1333:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 16 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1333:  
GCGCTGCGGG TTCCTC 16
- (2) INFORMATION FOR SEQ ID NO:1334:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 23 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1334:  
GTGGGTTTCT CCCGCCGTT CTC 23
- (2) INFORMATION FOR SEQ ID NO:1335:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1335:  
CGGTCTGTTG CCTTGTTGGG 20
- (2) INFORMATION FOR SEQ ID NO:1336:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 18 bas pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: singl  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1336:  
CTTCTTGCT TTTGGCT 18
- (2) INFORMATION FOR SEQ ID NO:1337:  
(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1337:  
GTTCTTTTCC TGCTTGGC

18

- (2) INFORMATION FOR SEQ ID NO:1338:
- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1338:  
GTCTTTTCCT TTCTT

15

- (2) INFORMATION FOR SEQ ID NO:1339:
- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1339:  
TGTGCTCGGT TGTGGGTC

18

- (2) INFORMATION FOR SEQ ID NO:1340:
- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1340:  
CGCTGGTCCT TTGCC

15

- (2) INFORMATION FOR SEQ ID NO:1341:
- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1341:  
CTGTGTGTTT CTGCTG

16

- (2) INFORMATION FOR SEQ ID NO:1342:
- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1342:  
GCGTCCGGTG GCCGCCGC

18

- (2) INFORMATION FOR SEQ ID NO:1343:
- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1343:  
GCCTCTCTCC TCTCCCC

17

- (2) INFORMATION FOR SEQ ID NO:1344:
- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1344:  
GTGGCCCTGT CGGGCGGG

18

- (2) INFORMATION FOR SEQ ID NO:1345:
- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1345:  
TCCTGCCGTC CTGTCTCCTT T 21

(2) INFORMATION FOR SEQ ID NO:1346:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1346:  
TCTTTTGCTG TCTTGT 16

(2) INFORMATION FOR SEQ ID NO:1347:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1347:  
CTTCCCGTCT CTGCTTT 17

(2) INFORMATION FOR SEQ ID NO:1348:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1348:  
GTCTGTCTC CCCGTCTCCT CCC 23

(2) INFORMATION FOR SEQ ID NO:1349:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1349:  
ACTGCTTCTC CCGGGG 16

(2) INFORMATION FOR SEQ ID NO:1350:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1350:  
GCTTCCCCGG CTTC 14

(2) INFORMATION FOR SEQ ID NO:1351:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1351:  
GGGTGGCCGG TGTCCCGGGC TCCGGCGCGG CGGC 34

(2) INFORMATION FOR SEQ ID NO:1352:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1352:  
GGCTTCGGCT GC 12

(2) INFORMATION FOR SEQ ID NO:1353:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1353:  
GGGTGGGTGG CGCGG 15

- (2) INFORMATION FOR SEQ ID NO:1354:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 28 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1354:  
GCTGCCGGGT CCGCGCGGCG CCTGGGCC 28
- (2) INFORMATION FOR SEQ ID NO:1355:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1355:  
CTTGTGCTGC TTTT 14
- (2) INFORMATION FOR SEQ ID NO:1356:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1356:  
TGCTTGTTC GTTC 14
- (2) INFORMATION FOR SEQ ID NO:1357:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 32 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1357:  
TGGCTGCTCC GGTCTGTGTT GTGGTTGTTT TG 32
- (2) INFORMATION FOR SEQ ID NO:1358:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 18 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1358:  
TTTCTTCTTG GGTGTGGG 18
- (2) INFORMATION FOR SEQ ID NO:1359:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1359:  
CCTTGCGGTT TTGG 14
- (2) INFORMATION FOR SEQ ID NO:1360:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1360:  
CTGTGGGCC TTTG 14
- (2) INFORMATION FOR SEQ ID NO:1361:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 19 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1361:  
GGGCCTTGGC TTCTGGCTC 19
- (2) INFORMATION FOR SEQ ID NO:1362:  
(i) SEQUENCE CHARACTERISTICS:



- (A) LENGTH: 125 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: lin ar

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1362:

CATCCACATG ATTGCTTAGA TTTGTGCTGT ATCTCTCAGG ATTATCACTG ATTACACATC 60  
CAACCAGTGC CAGCCAAAAG GATGCCCTGA GGCAAAGGT TTCCATCTTG AGGCAAATTT 120  
GAGGA 125

(2) INFORMATION FOR SEQ ID NO:1363:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 125 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Genomic DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1363:

CBTCCBCBTG BTTGCTTBGB TTTGTGCTGT BTCTCTCBGG BTTBCBCTG BTTBCBCTC 60  
CBBCCBGTGC CBGCCBBBGG .GBTGCCCTGB GGCBBBGGGT TTCCBTCTTG BGGCBBBTTT 120  
GBGGB 125

(2) INFORMATION FOR SEQ ID NO:1364:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1364:

CGTGGTCGCT CCGC 14

(2) INFORMATION FOR SEQ ID NO:1365:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1365:

GTTTCTCTGG TTCCTCCG 18

(2) INFORMATION FOR SEQ ID NO:1366:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1366:

GTCCCGCGGG GTGCTG 16

(2) INFORMATION FOR SEQ ID NO:1367:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1367:

TCTGGTCGCT GTCGT 15

(2) INFORMATION FOR SEQ ID NO:1368:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1368:

GGCTTGGGTC TCCGGGCG 18

(2) INFORMATION FOR SEQ ID NO:1369:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1369:

GTTTCCTTCC TTTTCCGC 18

- (2) INFORMATION FOR SEQ ID NO:1370:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1370:  
GTCCTGTCGT GGCGCCTGGG GCTC 24
- (2) INFORMATION FOR SEQ ID NO:1371:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1371:  
TTCTTTTGTG GGCT 14
- (2) INFORMATION FOR SEQ ID NO:1372:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1372:  
CTTTGGTGGC TGTGGCTG 18
- (2) INFORMATION FOR SEQ ID NO:1373:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1373:  
TGGTCTCTGT GGTG 15
- (2) INFORMATION FOR SEQ ID NO:1374:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1374:  
CTGCCCTGGG TCTGG 15
- (2) INFORMATION FOR SEQ ID NO:1375:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 46 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1375:  
GGGTGTGGCC TTGGGGCCGT CCTCTGGCTC CTCCTCGTGG GCCCCC 46
- (2) INFORMATION FOR SEQ ID NO:1376:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 265 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1376:  
GGGCTAAGAT GATCCACATC ACTACCACGT TGCCCACCAC AGAGGTCACC ACAATGACCC 60  
TGTAGGCAGC TGCCCAAAGG ACAATTGTC AGGCTGGTTG CACGAAGTGA TTGGGTCCG 120  
AGGTGTTAGT GGAGATGTTT GGGGAGAGGT CTGAGTCCAC CGGGAGGACG TTATCCATT 180  
CGAAGCTAGG CGGTAAAGCC CTACTATCTG TACACAACCC CCCTCTGCAG CAGAGTCCTG 240  
TCGTGGCGCC TGGGGCTCAG GGTCC 265
- (2) INFORMATION FOR SEQ ID NO:1377:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 265 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1377:

EPI-109

437

GGGCTBBGBT GBTCCBCBTC BCTBCCBCGT TGCCCBCCBC BGBGTCBCC BCBBTGBCCG 60  
 TGTBGGCBGC TGCCCBBBGG BCBTTTGCC BGGCTGGTTG CBCGBBCTGB TTGGGTCCG 120  
 BGGTGTBTGT GGBGTGTTT GGGGBGGGT CTGBGTCCBC CGGGBGGBCG TTBTCBTTT 180  
 CGBBGCTBGG CGGTBBBGCC CTBCTBTCTG TBCBCBCCC CCCTCTGCBG CBGBGTCCTG 240  
 TCGTGGCGCC TGGGGCTCBG GGTC 265

## (2) INFORMATION FOR SEQ ID NO:1378:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1378:

CGTTTTCTTC TCTC

14

## (2) INFORMATION FOR SEQ ID NO:1379:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1379:

GCTGGTTTC CTTTC

16

## (2) INFORMATION FOR SEQ ID NO:1380:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1380:

TGGCAGTGGG TGGGGTGGG GGTGGGTGG C

31

## (2) INFORMATION FOR SEQ ID NO:1381:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1381:

TTCCTTGTTT CTGGGGTGT CCT

23

## (2) INFORMATION FOR SEQ ID NO:1382:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1382:

CTTGCTCTGG GCTTTCT

18

## (2) INFORMATION FOR SEQ ID NO:1383:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1383:

CCCCTTTCC TTCC

14

## (2) INFORMATION FOR SEQ ID NO:1384:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1384:

TGTCTGTTTT CCTGGG

17

## (2) INFORMATION FOR SEQ ID NO:1385:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1385:  
CTCTCCTCTG TCTCTGTGT 19
- (2) INFORMATION FOR SEQ ID NO:1386:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1386:  
CCTTGCCCTG GCCC 14
- (2) INFORMATION FOR SEQ ID NO:1387:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1387:  
TCTTCCCTCT CCTGTCTCCT GT 22
- (2) INFORMATION FOR SEQ ID NO:1388:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1388:  
CCCTGTGTTT CGCCC 15
- (2) INFORMATION FOR SEQ ID NO:1389:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1389:  
GTCTTCCCTC TCCTG 15
- (2) INFORMATION FOR SEQ ID NO:1390:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1390:  
ACCTCCTTTT CCTCCG 16
- (2) INFORMATION FOR SEQ ID NO:1391:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1391:  
CTGGGTGGGG CCCTG 15
- (2) INFORMATION FOR SEQ ID NO:1392:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1392:  
CCTGTTCTCT GCTCCC 16
- (2) INFORMATION FOR SEQ ID NO:1393:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1393:  
TGGCTTGGGG TTTCTTCTG 19

- (2) INFORMATION FOR SEQ ID NO:1394:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1394:  
TGTGTCTTCT TCCTCTGTT 19
- (2) INFORMATION FOR SEQ ID NO:1395:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1395:  
GGCTGGCTTT CTCCTTC 17
- (2) INFORMATION FOR SEQ ID NO:1396:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1396:  
TTTTGTCTTC CTGGG 15
- (2) INFORMATION FOR SEQ ID NO:1397:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1397:  
TGCCCTTCT TCCTTCTTG GG 22
- (2) INFORMATION FOR SEQ ID NO:1398:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1398:  
TCCTTGGTGC TTGGGCTGGG 20
- (2) INFORMATION FOR SEQ ID NO:1399:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1399:  
CTGTGCGTCC GTCTGCTGG 19
- (2) INFORMATION FOR SEQ ID NO:1400:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1400:  
GGGGCCGGGG TGGCTGGGCC CTGCTTGCCG C 31
- (2) INFORMATION FOR SEQ ID NO:1401:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1401:  
ACGACCCCGG GCCGACCCGA G 21
- (2) INFORMATION FOR SEQ ID NO:1402:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 base pairs

(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1402:  
GCTCGGGGGG CTGTGTTCTG GCGCTGGTGG G 31

(2) INFORMATION FOR SEQ ID NO:1403:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1403:  
CTTGGGCCCC TCTGGGGGCT GGGTT 25

(2) INFORMATION FOR SEQ ID NO:1404:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1404:  
TCCTGCTGCG CCTGGGCGCT G 21

(2) INFORMATION FOR SEQ ID NO:1405:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1405:  
GCGTCTTGGG GTGC 14

(2) INFORMATION FOR SEQ ID NO:1406:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1406:  
GGGGCCGGGG GGCCGGGGG 19

(2) INFORMATION FOR SEQ ID NO:1407:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1407:  
GCCGCTGTTC GTGGGCTGG G 21

(2) INFORMATION FOR SEQ ID NO:1408:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1408:  
GGTGCCTGTG GCTGCC 16

(2) INFORMATION FOR SEQ ID NO:1409:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1409:  
GGTTGCCCG GTTGGTGGC 19

(2) INFORMATION FOR SEQ ID NO:1410:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1410:  
GCCGTCCTGC TGCCGGT 17

(2) INFORMATION FOR SEQ ID NO:1411:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1411:  
CGTTGGCTGG GTCCCCCGC 20

(2) INFORMATION FOR SEQ ID NO:1412:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1412:  
CCGTTTCCTG GGGTCC 16

(2) INFORMATION FOR SEQ ID NO:1413:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1413:  
GCGTGGGGTG CTCC 14

(2) INFORMATION FOR SEQ ID NO:1414:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1414:  
GGTTCCTCGT GCCG 14

(2) INFORMATION FOR SEQ ID NO:1415:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1415:  
CTGCTGCCTT GTCTTTCC 18

(2) INFORMATION FOR SEQ ID NO:1416:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1416:  
GGCCGTGGCG GCGTGGTGGT CC 22

(2) INFORMATION FOR SEQ ID NO:1417:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1417:  
GCCCCCCTG GCCTTCTGCT C 21

(2) INFORMATION FOR SEQ ID NO:1418:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1418:  
GGGGTCTGGC TGGT 14

- (2) INFORMATION FOR SEQ ID NO:1419:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 19 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1419:  
TGCCGGTGCC CTGGCGGC 19
- (2) INFORMATION FOR SEQ ID NO:1420:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 16 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1420:  
GGTCTTCTTC CTGGTG 16
- (2) INFORMATION FOR SEQ ID NO:1421:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 23 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1421:  
GCTCTGGGCC CGGCCGGTCT CGG 23
- (2) INFORMATION FOR SEQ ID NO:1422:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1422:  
CGGTCTCGTG TTCG 14
- (2) INFORMATION FOR SEQ ID NO:1423:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1423:  
CTCTTGCTGT GTTCCGGCCG 20
- (2) INFORMATION FOR SEQ ID NO:1424:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1424:  
CTCCTTCCTC TTCGCCGCC 20
- (2) INFORMATION FOR SEQ ID NO:1425:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1425:  
GCCGCTCCCC GCCC 14
- (2) INFORMATION FOR SEQ ID NO:1426:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1426:  
GCTCGTCGCC CTGGCCC 17
- (2) INFORMATION FOR SEQ ID NO:1427:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs



(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1427:  
GGCCTCCTCC TGGCCGC 17

(2) INFORMATION FOR SEQ ID NO:1428:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1428:  
TGTCTCGGGC GGCGCCTTG GC 22

(2) INFORMATION FOR SEQ ID NO:1429:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1429:  
GCTCCGTTTG GGGCTG 16

(2) INFORMATION FOR SEQ ID NO:1430:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1430:  
CCTCTGGCGC TTCC 14

(2) INFORMATION FOR SEQ ID NO:1431:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1431:  
GGCCCTCGGC CTGGGCGCTC 20

(2) INFORMATION FOR SEQ ID NO:1432:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1432:  
TCTTCGCCT GTGC 14

(2) INFORMATION FOR SEQ ID NO:1433:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1433:  
TGGTGGCCCT CGTGG 15

(2) INFORMATION FOR SEQ ID NO:1434:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1434:  
GCCCCCTCTG GCCTCCGGTG TCC 23

(2) INFORMATION FOR SEQ ID NO:1435:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1435:  
TGTGGTCCCC CGGCTGGT

18

(2) INFORMATION FOR SEQ ID NO:1436:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1436:  
GGCCGGGGCCG GTTGGGCGGG C

21

(2) INFORMATION FOR SEQ ID NO:1437:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1437:  
GTGGGCGCCG GCGGGTCCTC C

21

(2) INFORMATION FOR SEQ ID NO:1438:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1438:  
GGGCTGCCCT TCTCC

15

(2) INFORMATION FOR SEQ ID NO:1439:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1439:  
GCCGGGGGTC CCGC

14

(2) INFORMATION FOR SEQ ID NO:1440:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 29 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1440:  
GCTCCTGCTG TTCCCTGGGC TCTTCTGCC

29

(2) INFORMATION FOR SEQ ID NO:1441:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1441:  
TCTCTCCTGG GTGGTGCTG GGTGCCG

27

(2) INFORMATION FOR SEQ ID NO:1442:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1442:  
GGGTCTCCGG GCTTG

15

(2) INFORMATION FOR SEQ ID NO:1443:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 23 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1443:  
CCCCGCGCTG CTGGGCGTTC TGC

23

- (2) INFORMATION FOR SEQ ID NO:1444:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1444:  
GGTCTTG GGGG TTGTC 15
- (2) INFORMATION FOR SEQ ID NO:1445:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1445:  
TGTGGCCCCG CTCG 14
- (2) INFORMATION FOR SEQ ID NO:1446:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1446:  
TGTCGCCCTC CGTCGCC 17
- (2) INFORMATION FOR SEQ ID NO:1447:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1447:  
CGTCGCCCGC CTCGTCC 17
- (2) INFORMATION FOR SEQ ID NO:1448:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1448:  
CCTCCTGGGT GCGC 14
- (2) INFORMATION FOR SEQ ID NO:1449:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1449:  
GGCGGGCTGG TCCT 14
- (2) INFORMATION FOR SEQ ID NO:1450:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1450:  
GGCGTTTTC TCCTTCCTGG 20
- (2) INFORMATION FOR SEQ ID NO:1451:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1451:  
CTGCCTCCCC GGGGT 15
- (2) INFORMATION FOR SEQ ID NO:1452:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs

(B) TYPE: nucleic acid  
(C) STRANDEDNESS: singl  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1452:  
TTCTGCTGCT TGCTG

15

(2) INFORMATION FOR SEQ ID NO:1453:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1453:  
CTTCTTTCCC GTCTCC

16

(2) INFORMATION FOR SEQ ID NO:1454:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1454:  
CTTCTTTCCC GTCTCC

16

(2) INFORMATION FOR SEQ ID NO:1455:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1455:  
TTTTGCCTC TTG

14

(2) INFORMATION FOR SEQ ID NO:1456:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1456:  
GGTTCCTGTT GTTCT

16

(2) INFORMATION FOR SEQ ID NO:1457:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1457:  
GGCCTGCTTG GTGGCG

16

(2) INFORMATION FOR SEQ ID NO:1458:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1458:  
GCTTGTCGT TTCC

14

(2) INFORMATION FOR SEQ ID NO:1459:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 36 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1459:  
TCTCTCTTCT CTTGGGTCTC CGCTTCTCGT CCTGCC

36

(2) INFORMATION FOR SEQ ID NO:1460:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1460:  
TTTTCTGTCTCTCTCGC 18

(2) INFORMATION FOR SEQ ID NO:1461:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1461:  
GCCGTTCTCTC CTCC 14

(2) INFORMATION FOR SEQ ID NO:1462:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1462:  
GGCGTCTCTC TGCCC 15

(2) INFORMATION FOR SEQ ID NO:1463:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1463:  
TGTGCTGTTT GCCTCGG 17

(2) INFORMATION FOR SEQ ID NO:1464:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1464:  
GTGGTGCGGG TCCC 14

(2) INFORMATION FOR SEQ ID NO:1465:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1465:  
GGTGCTCCCC CGGC 14

(2) INFORMATION FOR SEQ ID NO:1466:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1466:  
GGGCCGGCTG GTTGCTGGG C 21

(2) INFORMATION FOR SEQ ID NO:1467:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1467:  
CTGTCTGGTG GGGTGTGGG CC 22

(2) INFORMATION FOR SEQ ID NO:1468:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1468:  
GCTGGGTTGG GGGTGTGGT 20

- (2) INFORMATION FOR SEQ ID NO:1469:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 15 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1469:  
GGCTCTTCTG TGGCC 15
- (2) INFORMATION FOR SEQ ID NO:1470:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 16 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1470:  
TGTGGGGCTG TTGGTG 16
- (2) INFORMATION FOR SEQ ID NO:1471:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 16 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1471:  
TCTCTGTGGG CGTGTG 16
- (2) INFORMATION FOR SEQ ID NO:1472:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 17 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1472:  
CTGGGTCTTG GGGCTTC 17
- (2) INFORMATION FOR SEQ ID NO:1473:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 15 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1473:  
CTCCCTTGTG CTGGG 15
- (2) INFORMATION FOR SEQ ID NO:1474:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1474:  
TGCGGCCTCC CCGC 14
- (2) INFORMATION FOR SEQ ID NO:1475:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1475:  
CCCCCTTCTG GGCC 14
- (2) INFORMATION FOR SEQ ID NO:1476:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 20 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1476:  
GGTGGCCTGG CTCCTTGTGG 20
- (2) INFORMATION FOR SEQ ID NO:1477:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 16 base pairs

- (B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1477:  
GCGCTTCTGG CTCTTG 16
- (2) INFORMATION FOR SEQ ID NO:1478:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1478:  
CCCTGTCCTT CTTGCCTCG T 21
- (2) INFORMATION FOR SEQ ID NO:1479:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1479:  
GGCTGCTGGG CTGC 14
- (2) INFORMATION FOR SEQ ID NO:1480:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1480:  
GTTGGGCTTG GCCGGGG 17
- (2) INFORMATION FOR SEQ ID NO:1481:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1481:  
CTGCCCGGTG CCTCC 15
- (2) INFORMATION FOR SEQ ID NO:1482:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1482:  
TCTTGGCTGG TCCCTCGT 18
- (2) INFORMATION FOR SEQ ID NO:1483:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1483:  
TGTCCTTGGG CCC 14
- (2) INFORMATION FOR SEQ ID NO:1484:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1484:  
GCTCCCGCTG CTCGGCCTCC GT 22
- (2) INFORMATION FOR SEQ ID NO:1485:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1485:  
GTTCTTTGGC CTCTTGCTCC 20
- (2) INFORMATION FOR SEQ ID NO:1486:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1486:  
GCCTGCTGTC TTGTCC 16
- (2) INFORMATION FOR SEQ ID NO:1487:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1487:  
CGTCCCCTCC TCGCTTGCCT TTC 23
- (2) INFORMATION FOR SEQ ID NO:1488:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1488:  
CCTCTTCCTT GTCTTCCA 18
- (2) INFORMATION FOR SEQ ID NO:1489:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1489:  
GGCCTTCCTC CGCTTCCGCT GC 22
- (2) INFORMATION FOR SEQ ID NO:1490:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1490:  
TGGGGCCCGC GCCGG 15
- (2) INFORMATION FOR SEQ ID NO:1491:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1491:  
GGGGGCGCTC GGCTCCGCGG CTTCTCCCC GG 32
- (2) INFORMATION FOR SEQ ID NO:1492:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1492:  
CTGGGGGGTC CTGG 14
- (2) INFORMATION FOR SEQ ID NO:1493:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid



(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1493:  
TCTCCGGGGC CTGCGGCTCG C

21

(2) INFORMATION FOR SEQ ID NO:1494:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1494:  
GGGCTCGGGG CTGCGTGCGC C

21

(2) INFORMATION FOR SEQ ID NO:1495:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1495:  
GGCGCGGGCG TCCGCGGTG

19

(2) INFORMATION FOR SEQ ID NO:1496:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1496:  
GGTGCGGCTG TCCCGCC

17

(2) INFORMATION FOR SEQ ID NO:1497:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1497:  
GTGGTGTGTC TCCGTTCTCG TCCTGCGCCG TC

32

(2) INFORMATION FOR SEQ ID NO:1498:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1498:  
CTGGTCTGCC CGTGG

15

(2) INFORMATION FOR SEQ ID NO:1499:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1499:  
GGTCCTGGGC GTGGTGG

17

(2) INFORMATION FOR SEQ ID NO:1500:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1500:  
GGGGCGTCTG GTGC

14

- (2) INFORMATION FOR SEQ ID NO:1501:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1501:  
CTCGTCTGCC CCGTG 15
- (2) INFORMATION FOR SEQ ID NO:1502:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: cDNA  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1502:  
GGGCTTCGGG CTCGG 15
- (2) INFORMATION FOR SEQ ID NO:1503:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1503:  
GGCTGTTCGT CCCCCCTGCC GCTCTGTGGC CTCC 34
- (2) INFORMATION FOR SEQ ID NO:1504:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1504:  
GGGGCTCCTC GTTTTC 16
- (2) INFORMATION FOR SEQ ID NO:1505:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1505:  
GCTGCTTCGG GTGCCTTCT C 21
- (2) INFORMATION FOR SEQ ID NO:1506:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1506:  
GGCGTGTGGC CCCGG 15
- (2) INFORMATION FOR SEQ ID NO:1507:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1507:  
GTCCCGGCC TGCTGGGCTG GCGGGGTC 29
- (2) INFORMATION FOR SEQ ID NO:1508:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1508:  
GCTGCCCTGG GCTTGTGGCC CGTCT 25

- (2) INFORMATION FOR SEQ ID NO:1509:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1509:  
GGTTGTCTGT CGGT 14
- (2) INFORMATION FOR SEQ ID NO:1510:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1510:  
GCTTGTCTCG GGTTCCTGG 19
- (2) INFORMATION FOR SEQ ID NO:1511:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1511:  
CCTCTGTGCT GGGC 14
- (2) INFORMATION FOR SEQ ID NO:1512:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1512:  
GCTTCTCTGC CTCCTGCTCC 20
- (2) INFORMATION FOR SEQ ID NO:1513:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1513:  
GCCCTCCTGG TGGCTC 16
- (2) INFORMATION FOR SEQ ID NO:1514:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1514:  
GGCTGGGGGT GCCCGTGCG 19
- (2) INFORMATION FOR SEQ ID NO:1515:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1515:  
GGGGTGGGTG TGGGTGTT 19
- (2) INFORMATION FOR SEQ ID NO:1516:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1516:  
TTCGGGGTCC TCCCTTCCC 20
- (2) INFORMATION FOR SEQ ID NO:1517:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1517:  
GTTTCATCTT GGCTTTATCC

20

(2) INFORMATION FOR SEQ ID NO:1518:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1518:  
TCTCCCCTTG TTCTCCCC

19

(2) INFORMATION FOR SEQ ID NO:1519:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1519:  
TCTCCTGCTC TGGRGTCTCC TC

22

(2) INFORMATION FOR SEQ ID NO:1520:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1520:  
TTCCCTCCCT CCCCTGCC

18

(2) INFORMATION FOR SEQ ID NO:1521:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1521:  
GTGTTGTCTG TGGGTGTCC

19

(2) INFORMATION FOR SEQ ID NO:1522:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1522:  
GTTTCGCTCT TGTTGCCC

18

(2) INFORMATION FOR SEQ ID NO:1523:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1523:  
TGGGCCCTTC CTGCTGG

18

(2) INFORMATION FOR SEQ ID NO:1524:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1524:  
GGGGGAGTTT CATCTTGG

18

(2) INFORMATION FOR SEQ ID NO:1525:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1525:  
GGGGGBGTTT CBTCTTGGCT TT 22
- (2) INFORMATION FOR SEQ ID NO:1526:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1526:  
GGGGGBGTTT CBTCTTGGCT T 21
- (2) INFORMATION FOR SEQ ID NO:1527:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1527:  
GGGGGBGTTT CBTCTTGGCT 20
- (2) INFORMATION FOR SEQ ID NO:1528:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1528:  
GGGGGBGTTT CBTCTTGGC 19
- (2) INFORMATION FOR SEQ ID NO:1529:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1529:  
GGGGGBGTTT CBTCTTGG 18
- (2) INFORMATION FOR SEQ ID NO:1530:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1530:  
GGGGGBGTTT CBTCTTG 17
- (2) INFORMATION FOR SEQ ID NO:1531:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1531:  
GGGGGBGTTT CBTCTT 16
- (2) INFORMATION FOR SEQ ID NO:1532:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1532:  
GGGGGBGTTT CBTCT 15
- (2) INFORMATION FOR SEQ ID NO:1533:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1533:  
GGGGGBGTTT CBTC 14

- (2) INFORMATION FOR SEQ ID NO:1534:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1534:  
GGGGGBGTTT CBT 13
- (2) INFORMATION FOR SEQ ID NO:1535:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1535:  
GGGGGBGTTT CB 12
- (2) INFORMATION FOR SEQ ID NO:1536:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1536:  
GGGGBGTTTC BTCTTGGCTT T 21
- (2) INFORMATION FOR SEQ ID NO:1537:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1537:  
GGGGBGTTTC BTCTTGGCTT 20
- (2) INFORMATION FOR SEQ ID NO:1538:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1538:  
GGGGBGTTTC BTCTTGGCT 19
- (2) INFORMATION FOR SEQ ID NO:1539:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1539:  
GGGGBGTTTC BTCTTGGC 18
- (2) INFORMATION FOR SEQ ID NO:1540:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1540:  
GGGGBGTTTC BTCTTGG 17
- (2) INFORMATION FOR SEQ ID NO:1541:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1541:  
GGGGBGTTTC BTCTTG 16
- (2) INFORMATION FOR SEQ ID NO:1542:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs

EPI-109

457

- (B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1542:  
GGGGBGTTTC BTCTT 15
- (2) INFORMATION FOR SEQ ID NO:1543:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1543:  
GGGGBGTTTC BTCT 14
- (2) INFORMATION FOR SEQ ID NO:1544:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1544:  
GGGGBGTTTC BTC 13
- (2) INFORMATION FOR SEQ ID NO:1545:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1545:  
GGGGBGTTTC BT 12
- (2) INFORMATION FOR SEQ ID NO:1546:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1546:  
GGGBGTTTCB TCTTGGCTTT 20
- (2) INFORMATION FOR SEQ ID NO:1547:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1547:  
GGGBGTTTCB TCTTGGCTT 19
- (2) INFORMATION FOR SEQ ID NO:1548:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1548:  
GGGBGTTTCB TCTTGGCT 18
- (2) INFORMATION FOR SEQ ID NO:1549:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1549:  
GGGBGTTTCB TCTTGGC 17
- (2) INFORMATION FOR SEQ ID NO:1550:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single

- (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1550:  
GGGBGTTTCB TCTTGG 16
- (2) INFORMATION FOR SEQ ID NO:1551:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1551:  
GGGBGTTTCB TCTTG 15
- (2) INFORMATION FOR SEQ ID NO:1552:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1552:  
GGGBGTTTCB TCTT 14
- (2) INFORMATION FOR SEQ ID NO:1553:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1553:  
GGGBGTTTCB TCT 13
- (2) INFORMATION FOR SEQ ID NO:1554:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1554:  
GGGBGTTTCB TC 12
- (2) INFORMATION FOR SEQ ID NO:1555:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1555:  
GGBGTTTCBT CTTGGCTT 19
- (2) INFORMATION FOR SEQ ID NO:1556:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1556:  
GGBGTTTCBT CTTGGCTT 18
- (2) INFORMATION FOR SEQ ID NO:1557:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1557:  
GGBGTTTCBT CTTGGCT 17
- (2) INFORMATION FOR SEQ ID NO:1558:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1558:  
GGBGTTTCBT CTTGGC 16



- (2) INFORMATION FOR SEQ ID NO:1559:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1559:  
GGBGTTTCBT CTTGG 15
- (2) INFORMATION FOR SEQ ID NO:1560:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1560:  
GGBGTTTCBT CTTG 14
- (2) INFORMATION FOR SEQ ID NO:1561:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1561:  
GGBGTTTCBT CTT 13
- (2) INFORMATION FOR SEQ ID NO:1562:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1562:  
GGBGTTTCBT CT 12
- (2) INFORMATION FOR SEQ ID NO:1563:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1563:  
GBGTTTCBTC TTGGCTTT 18
- (2) INFORMATION FOR SEQ ID NO:1564:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1564:  
GBGTTTCBTC TTGGCTT 17
- (2) INFORMATION FOR SEQ ID NO:1565:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1565:  
GBGTTTCBTC TTGGCT 16
- (2) INFORMATION FOR SEQ ID NO:1566:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1566:  
GBGTTTCBTC TTGGC 15
- (2) INFORMATION FOR SEQ ID NO:1567:  
(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1567:  
GBGTTTCBTC TTGG 14
- (2) INFORMATION FOR SEQ ID NO:1568:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1568:  
GBGTTTCBTC TTG 13
- (2) INFORMATION FOR SEQ ID NO:1569:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1569:  
BGTTTCBTC TT 12
- (2) INFORMATION FOR SEQ ID NO:1570:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 17 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1570:  
BGTTTCBTCT TGGCTTT 17
- (2) INFORMATION FOR SEQ ID NO:1571:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 16 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1571:  
BGTTTCBTCT TGGCTT 16
- (2) INFORMATION FOR SEQ ID NO:1572:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 16 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1572:  
BGTTTCBTCT TGGCTT 16
- (2) INFORMATION FOR SEQ ID NO:1573:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1573:  
BGTTTCBTCT TGGCT 15
- (2) INFORMATION FOR SEQ ID NO:1574:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 14 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1574:  
BGTTTCBTCT TGGC 14
- (2) INFORMATION FOR SEQ ID NO:1575:
- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

EPI-109

461

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1575:  
BGTTTCBTCT TGG

13

(2) INFORMATION FOR SEQ ID NO:1576:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1576:  
BGTTTCBTCT TG

12

(2) INFORMATION FOR SEQ ID NO:1577:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1577:  
GTTTCBTCTT GGCTTT

16

(2) INFORMATION FOR SEQ ID NO:1578:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1578:  
GTTTCBTCTT GGCTT

15

(2) INFORMATION FOR SEQ ID NO:1579:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1579:  
GTTTCBTCTT GGCT

14

(2) INFORMATION FOR SEQ ID NO:1580:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1580:  
GTTTCBTCTT GGC

13

(2) INFORMATION FOR SEQ ID NO:1581:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1581:  
GTTTCBTCTT GG

12

(2) INFORMATION FOR SEQ ID NO:1582:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1582:  
TTTCBTCTTG GCTTT

15

(2) INFORMATION FOR SEQ ID NO:1583:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1583:  
TTTCBTCTTG GCTT

14

EPI-109

462

(2) INFORMATION FOR SEQ ID NO:1584:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 13 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1584:

TTTCBTCTTG GCT

13

(2) INFORMATION FOR SEQ ID NO:1585:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1585:

TTTCBTCTTG GC

12

(2) INFORMATION FOR SEQ ID NO:1586:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1586:

TTCBTCTTGG CTTT

14

(2) INFORMATION FOR SEQ ID NO:1587:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 13 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1587:

TTCBTCTTGG CTT

13

(2) INFORMATION FOR SEQ ID NO:1588:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1588:

TTCBTCTTGG CT

12

(2) INFORMATION FOR SEQ ID NO:1589:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 13 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1589:

TCBTCTTGGC TTT

13

(2) INFORMATION FOR SEQ ID NO:1590:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 12 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1590:

TCBTCTTGGC TT

12

(2) INFORMATION FOR SEQ ID NO:1591:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 22 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1591:

GGGGGBGTTT CBTCTTGGCT TT

22

(2) INFORMATION FOR SEQ ID NO:1592:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs

EPI-109

463

(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1592:  
GGGGBGTTTC BTCTTGGCTT T 21

(2) INFORMATION FOR SEQ ID NO:1593:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1593:  
GGGBGTTTCB TCTTGGCTTT 20

(2) INFORMATION FOR SEQ ID NO:1594:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1594:  
GGBGTTTCBT CTTGGCTTT 19

(2) INFORMATION FOR SEQ ID NO:1595:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1595:  
GBGTTTCBTC TTGGCTTT 18

(2) INFORMATION FOR SEQ ID NO:1596:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1596:  
BGTTTCBTCT TGGCTTT 17

(2) INFORMATION FOR SEQ ID NO:1597:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1597:  
GTTTCBTCTT GGCTTT 16

(2) INFORMATION FOR SEQ ID NO:1598:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1598:  
TTTCBTCTTG GCTTT 15

(2) INFORMATION FOR SEQ ID NO:1599:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1599:  
TTCBTCTTGG CTTT 14

(2) INFORMATION FOR SEQ ID NO:1600:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

EPI-109

464

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1600:  
TCBTCTTGGC TTT 13

(2) INFORMATION FOR SEQ ID NO:1601:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1601:  
CBTCTTGGCT TT 12

(2) INFORMATION FOR SEQ ID NO:1602:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1602:  
GGGGGBGTTT CBTCTTGGCT T 21

(2) INFORMATION FOR SEQ ID NO:1603:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1603:  
GGGGBGTTTC BTCTTGGCTT 20

(2) INFORMATION FOR SEQ ID NO:1604:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1604:  
GGGBGTTTCB TCTTGGCTT 19

(2) INFORMATION FOR SEQ ID NO:1605:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1605:  
GGBGTTTCBT CTTGGCTT 18

(2) INFORMATION FOR SEQ ID NO:1606:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1606:  
GBGTTTCBTC TTGGCTT 17

(2) INFORMATION FOR SEQ ID NO:1607:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1607:  
BGTTTCBTCT TGGCTT 16

(2) INFORMATION FOR SEQ ID NO:1608:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1608:  
GTTTCBTCTT GGCTT 15

- (2) INFORMATION FOR SEQ ID NO:1609:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1609:  
TTTCBTCTTG GCTT 14
- (2) INFORMATION FOR SEQ ID NO:1610:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1610:  
TTTCBTCTTGG CTT 13
- (2) INFORMATION FOR SEQ ID NO:1611:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1611:  
TCBTCTTGGC TT 12
- (2) INFORMATION FOR SEQ ID NO:1612:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1612:  
GGGGGBGTTT CBTCTTGGCT 20
- (2) INFORMATION FOR SEQ ID NO:1613:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1613:  
GGGGGBGTTTC BTCTTGGCT 19
- (2) INFORMATION FOR SEQ ID NO:1614:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1614:  
GGGBGTTTCB TCTTGGCT 18
- (2) INFORMATION FOR SEQ ID NO:1615:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1615:  
GGBGTTTCBT CTTGGCT 17
- (2) INFORMATION FOR SEQ ID NO:1616:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1616:  
GBGTTTCBTC TTGGCT 16
- (2) INFORMATION FOR SEQ ID NO:1617:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs

- (B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1617:  
BGTTTCBTCT TGGCT 15
- (2) INFORMATION FOR SEQ ID NO:1618:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1618:  
GTTTCBTCTT GGCT 14
- (2) INFORMATION FOR SEQ ID NO:1619:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1619:  
TTTCBTCTTG GCT 13
- (2) INFORMATION FOR SEQ ID NO:1620:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1620:  
TTCBTCTTGG CT 12
- (2) INFORMATION FOR SEQ ID NO:1621:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1621:  
GGGGGBGTTT CBTCTTGGC 19
- (2) INFORMATION FOR SEQ ID NO:1622:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1622:  
GGGGBGTTTC BTCTTGGC 18
- (2) INFORMATION FOR SEQ ID NO:1623:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1623:  
GGGBGTTTCB TCTTGGC 17
- (2) INFORMATION FOR SEQ ID NO:1624:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1624:  
GGBGTTTCBT CTTGGC 16
- (2) INFORMATION FOR SEQ ID NO:1625:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: lin ar



EPI-109

467

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1625:  
GBGTTTCBTC TTGGC 15

(2) INFORMATION FOR SEQ ID NO:1626:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1626:  
BGTTCBTCT TGGC 14

(2) INFORMATION FOR SEQ ID NO:1627:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1627:  
GTTTCBTCTT GGC 13

(2) INFORMATION FOR SEQ ID NO:1628:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1628:  
TTTCBTCTTG GC 12

(2) INFORMATION FOR SEQ ID NO:1629:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1629:  
GGGGGBGTTT CBTCTTGG 18

(2) INFORMATION FOR SEQ ID NO:1630:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1630:  
GGGGGBGTTT BTCTTGG 17

(2) INFORMATION FOR SEQ ID NO:1631:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1631:  
GGGBGTTTCB TCTTGG 16

(2) INFORMATION FOR SEQ ID NO:1632:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1632:  
GGBGTTTCBT CTTGG 15

(2) INFORMATION FOR SEQ ID NO:1633:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1633:  
GBGTTTCBTC TTGG 14

EPI-109

468

- (2) INFORMATION FOR SEQ ID NO:1634:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1634:  
BGTTTCBTCT TGG 13
- (2) INFORMATION FOR SEQ ID NO:1635:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1635:  
GTTTCBTCTT GG 12
- (2) INFORMATION FOR SEQ ID NO:1636:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1636:  
GGGGGBGTTT CBTCTTG 17
- (2) INFORMATION FOR SEQ ID NO:1637:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1637:  
GGGGBGTTTC BTCTTG 16
- (2) INFORMATION FOR SEQ ID NO:1638:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1638:  
GGGBGTTTCB TCTTG 15
- (2) INFORMATION FOR SEQ ID NO:1639:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1639:  
GGBGTTTCBT CTTG 14
- (2) INFORMATION FOR SEQ ID NO:1640:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1640:  
GBGTTTCBTC TTG 13
- (2) INFORMATION FOR SEQ ID NO:1641:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1641:  
BGTTTCBTCT TG 12
- (2) INFORMATION FOR SEQ ID NO:1642:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs

EPI-109

469

(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1642:  
GGGGGBGTTT CBTCTT 16

(2) INFORMATION FOR SEQ ID NO:1643:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1643:  
GGGGBGTTTC BTCTT 15

(2) INFORMATION FOR SEQ ID NO:1644:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1644:  
GGGBGTTTCB TCTT 14

(2) INFORMATION FOR SEQ ID NO:1645:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1645:  
GGGBGTTTCB TCTT 14

(2) INFORMATION FOR SEQ ID NO:1646:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1646:  
GGBGTTTCBT CTT 13

(2) INFORMATION FOR SEQ ID NO:1647:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1647:  
GBGTTTCBTC TT 12

(2) INFORMATION FOR SEQ ID NO:1648:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1648:  
GGGGGBGTTT CBTCT 15

(2) INFORMATION FOR SEQ ID NO:1649:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1649:  
GGGGBGTTTC BTCT 14

(2) INFORMATION FOR SEQ ID NO:1650:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

EPI-109

470

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1650:  
GGGBGTTTCB TCT

13

- (2) INFORMATION FOR SEQ ID NO:1651:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1651:  
GGBGTTTCBT CT

12

- (2) INFORMATION FOR SEQ ID NO:1652:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1652:  
GGGGGBGTTT CBTC

14

- (2) INFORMATION FOR SEQ ID NO:1653:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1653:  
GGGGBGTTTC BTC

13

- (2) INFORMATION FOR SEQ ID NO:1654:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1654:  
GGGBGTTTCB TC

12

- (2) INFORMATION FOR SEQ ID NO:1655:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1655:  
GGGGGBGTTT CBT

13

- (2) INFORMATION FOR SEQ ID NO:1656:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1656:  
GGGGBGTTTC BT

12

- (2) INFORMATION FOR SEQ ID NO:1657:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1657:  
GGGGGBGTTT CB

12

- (2) INFORMATION FOR SEQ ID NO:1658:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1658:  
TCTCCCCTTG TTCCTCCCC

19

- (2) INFORMATION FOR SEQ ID NO:1659:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1659:  
TCTCCTGCTC TGGTGTCTCC TC 22
- (2) INFORMATION FOR SEQ ID NO:1660:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1660:  
TTCCTCCCT CCCCTGCC 18
- (2) INFORMATION FOR SEQ ID NO:1661:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1661:  
GTGTTGTCTG TGGGTGTCC 19
- (2) INFORMATION FOR SEQ ID NO:1662:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1662:  
GTTTCGCTCT TGTGCCC 18
- (2) INFORMATION FOR SEQ ID NO:1663:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1663:  
TGGGCCCTTC CTGCTGG 18
- (2) INFORMATION FOR SEQ ID NO:1664:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1664:  
GCTGGTCTC TGCTGTCCTT GCTG 24
- (2) INFORMATION FOR SEQ ID NO:1665:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1665:  
GTGCTCBTGG TGTCTTCC 20
- (2) INFORMATION FOR SEQ ID NO:1666:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1666:  
GCCCTGGGGC CCCCTGTCT TCTTGGGG 28
- (2) INFORMATION FOR SEQ ID NO:1667:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs

- (B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1667:  
CCTCTTCCT CTGGGGGCCG 20
- (2) INFORMATION FOR SEQ ID NO:1668:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1668:  
TCTCTCTCCC TCTCTGCGT CTCTC 25
- (2) INFORMATION FOR SEQ ID NO:1669:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1669:  
TCTTTCTCTC TCTCTTCC CC 22
- (2) INFORMATION FOR SEQ ID NO:1670:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1670:  
TTTCCGCTC TTTCTGTCTC 20
- (2) INFORMATION FOR SEQ ID NO:1671:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1671:  
GGTGTCTGGT TTTCTCTCTC C 21
- (2) INFORMATION FOR SEQ ID NO:1672:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1672:  
GCTGGCTGCC TGTCTGGCCT GCGCTCTT 28
- (2) INFORMATION FOR SEQ ID NO:1673:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1673:  
GGCCTGTGCT GTTCTCTC 18
- (2) INFORMATION FOR SEQ ID NO:1674:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1674:  
TCCGGTTCCT GTCCTCTCTG TCTGTC 26
- (2) INFORMATION FOR SEQ ID NO:1675:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1675:  
 GCCCCCTCTG GGTCTCCCT CTGGC 25
- (2) INFORMATION FOR SEQ ID NO:1676:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 18 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1676:  
 GTGGTGGTCT TGTGCTT 18
- (2) INFORMATION FOR SEQ ID NO:1677:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 19 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1677:  
 GGGCTGGGCT CCGTGTCTC 19
- (2) INFORMATION FOR SEQ ID NO:1678:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 17 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1678:  
 CBGTGCTCBT GGTGTCC 17
- (2) INFORMATION FOR SEQ ID NO:1679:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 21 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1679:  
 GCTGBGGGBG CGTCTGCTGG C 21
- (2) INFORMATION FOR SEQ ID NO:1680:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 329 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1680:  
 TGCTTTTCTT TTCTGGGCCT CTGTGGTCTG TTTTCTCTG GCCCTGCTGG GGCCTCTCTCC 60  
 GCCGCCCCGCC TGGCTCCCGG BGCCCBTGBT GGGCBTGGCG TGGTTCTTGC CCTCCTTTGG 120  
 CTGCCGTGCC CGCTCCCCGG CCTCCTGGCG GGTGGCCGTT GGGCCCGTGT TCCCCTGGGG 180  
 CCTGGGGCTC CCTTCTCTCG CCTTCTTGC TGGGCCTCTG CTGCTGCTGG TGCTGTGGCC 240  
 CCCGTACACC GAGGAGCCCA TGATGGGCAT GCCACAGACG ACAGGCGTBC BCCGBGGBGC 300  
 CCBTGTGGG CBTGCCBCBG BCGBCBGGC 329
- (2) INFORMATION FOR SEQ ID NO:1681:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 9 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1681:  
 CTGGGCCTC 9
- (2) INFORMATION FOR SEQ ID NO:1682:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 12 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1682:  
 GCCGCCCCGCC TG 12
- (2) INFORMATION FOR SEQ ID NO:1683:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 14 base pairs  
 (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1683:  
GCCCCGCTCCC CGGC 14

(2) INFORMATION FOR SEQ ID NO:1684:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1684:  
CBCCGBGGBG CCC 13

(2) INFORMATION FOR SEQ ID NO:1685:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 304 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1685:  
GGCGCCGTGC CGCGTCTTGG TGGCGGCGGG TTCGCGCCCC CGCGGGGCCCC CTCCGGTCCG 60  
TTCGCGCCCC CGCGGGGGCCC CTCCGGTCCC GGGTCGGGGC CCCCCGCGGC CGCCTCGGGG 120  
CTGGGGCGCT GGTGGCCGGG CCGCGCCTCC GCCTGCCGCT TCTGGCTGGG CCCCCGGCGC 180  
CCCCCTCCCT CTTGCTCGGG TCCCCGTGAC AGCGCGTCCT GTGTCTCCAG CAGCATGGCC 240  
GGGCCAGCTG GGCCCCBCBG CGCGTCCTGT GTCTCCBGC BCBTGGCCGG GCCBGTGGG 300  
CCCC 304

(2) INFORMATION FOR SEQ ID NO:1686:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1686:  
GCGCGTCCTG 10

(2) INFORMATION FOR SEQ ID NO:1687:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1687:  
GCTGGGCCCC GG 12

(2) INFORMATION FOR SEQ ID NO:1688:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1688:  
CGGGTCGGGG CCCCCC 16

(2) INFORMATION FOR SEQ ID NO:1689:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1689:  
CGCGCCCGCG 10

(2) INFORMATION FOR SEQ ID NO:1690:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 213 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1690:  
ACAGAGCAGT GCTGTTGTTG GGCATCTTGC CTTCCAGGG BCBGBGCBTG CTGTTGTTGG 60  
GCBTCTTGCC TTCCCBGGGC CCTTTTCTGG TGGGTGGTG CTGTTGTTGG GCTTCTTCT 120  
GTTCCCBGBG BCBGTGCTG TTGTTGGGCB TCTTGCCCTC CCBGGGCCCT TTTCTGGTGG 180  
GGTGGTGCTG TTGTTGGGCT TTCTTCTGTT CCC 213



(2) INFORMATION FOR SEQ ID NO:1691:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 8 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1691:  
GBGCBTGC 8

(2) INFORMATION FOR SEQ ID NO:1692:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 9 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1692:  
TTGTTGGGC 9

(2) INFORMATION FOR SEQ ID NO:1693:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 13 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1693:  
TGCCTTCCCB GGG 13

(2) INFORMATION FOR SEQ ID NO:1694:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 133 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1694:  
TTTCCCTGG GTCTTCCCTC CTGCTCTTTT TTCATTTGCT CTCCTATTAC TTTCTGTGTC 60  
CATTCTTTTCA TTAACCGAGC TGTBTTTGCT CTCCTBTTBC TTTCTGTGTC CBTCTTTTTCB 120  
TTBBCCGBGC TGT 133

(2) INFORMATION FOR SEQ ID NO:1695:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 8 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1695:  
CCCCTGGG 8

(2) INFORMATION FOR SEQ ID NO:1696:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 11 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1696:  
GCTCTCCTBT T 11

(2) INFORMATION FOR SEQ ID NO:1697:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 14 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1697:  
CBTTBBCCGB GCTG 14

(2) INFORMATION FOR SEQ ID NO:1698:  
(i) SEQUENCE CHARACTERISTICS:  
    (A) LENGTH: 299 base pairs  
    (B) TYPE: nucleic acid  
    (C) STRANDEDNESS: single  
    (D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1698:  
GCCTGTGTCT GTCCTCCTGC TTCGTTCTC TCCTTCCTGC TTGGTGCCCT TGCCGGTCCT 60  
GCTCCTCCGG GCTGTGGGTC GTGGCCCTGG CTCGGCTGG TGGGCTCCCC TGGCCTTCGC 120

TGGCTGGCGG CGTGGCGGTC TTGCTCTGGG CCTGGCTGTG GCCGTGGTTG GGGGTCTTCG 180  
 CTGCCTCCGT TTGGGTGGCT CTCTGAATAT TGACCTTCCT CCATGGCGGT CCTGCTTGGA 240  
 TTCTCCCGAT CTCTGGBBTB TGBCCCTTCCT CCBTGGCGGT CCTGCTTGGT TTCTCCCGB 299

## (2) INFORMATION FOR SEQ ID NO:1699:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1699:

GTCCTCCT

8

## (2) INFORMATION FOR SEQ ID NO:1700:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1700:

TGTGTCTGTC CTCC

14

## (2) INFORMATION FOR SEQ ID NO:1701:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1701:

GTGGCCCTGG C

11

## (2) INFORMATION FOR SEQ ID NO:1702:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1702:

CGTGGTTGGG G

11

## (2) INFORMATION FOR SEQ ID NO:1703:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 16 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1703:

TCTCTGGBTB TTGBCC

16

## (2) INFORMATION FOR SEQ ID NO:1704:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 378 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1704:

GCCTTTCCTG GTTCTCTTGT TGTTTTTGGG GTTTGGCTTA CAGTAGAGTA GGGGATTCCA 60  
 TGGCAGGAGC CATCTTCTTC ATGGACTCCT TCAAGGAGAC CTTAGGTTTC TGAGGGACTG 120  
 CTAACACGCC ATCTGGAGCB CBGTBGBGTB GGGGBTCCB TGGCBGBGCG CBTCTTCTTC 180  
 BTGGBCTCCT TCBGGBGBC CTTBGGTTTC TGBGGGBCTG CTBBCBCGCC BTCTGGBGCG 240  
 TTGTTTTTGG GGTTTGGCTT GCCTTTCCTG GTTCTCTTBC BGTBGBGTBG GGGBTTCBCT 300  
 GGCBBGBGCC BTCTTCTTCB TGGBCTCCTT CBBGGBGCC TTBGGTTTCT GBGGGBCTGC 360  
 TBBCBCGCCB TCTGGBGC 378

## (2) INFORMATION FOR SEQ ID NO:1705:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1705:

TGGBCTCC

8

## (2) INFORMATION FOR SEQ ID NO:1706:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1706:  
CCBTCTGGB

9

(2) INFORMATION FOR SEQ ID NO:1707:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1707:  
CTGCTBCCBC G

11

(2) INFORMATION FOR SEQ ID NO:1708:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1708:  
GTTTTTGGGG TTG

14

(2) INFORMATION FOR SEQ ID NO:1709:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 279 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: Genomic DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1709:

GCCTGTGTCT	GTCCTCCTGC	TTCGTTCTCTC	TCGTTCTCTGC	TTGGTGCCCT	TGCCGGTCTCT	60
GCTCCTCCGG	GCTGTGGGTC	CTCGCCCTGG	CTCCGGCTGG	TGGGCTCCCC	TGGCCTTCGC	120
TGGCTGGCGG	CGTGCCCCBG	BBCGBGBCCC	GBCCGBCBG	GCCGTGGTTG	GGGGTCTTCG	180
CTGCCTCCGT	TTGGGTGGCG	ATCTCTGAAT	ATTGACCTTC	CATGGCGGTC	CTGCTTGGAG	240
BTCTCTGGBT	BTTGBCCTTC	CBTGGCGGTC	CTGCTTGGB			279

(2) INFORMATION FOR SEQ ID NO:1710:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 291 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1710:

GCCTGTGTCT	GTCCTCCTGC	TTCGTTCTCTC	TCGTTCTCTGC	TTGGTGCCCT	TGCCGGTCTCT	60
GCTCCTCCGG	GCTGTGGGTC	CTCGCCCTGG	CTCCGGCTGG	TGGGCTCCCC	TGGCCTTCGC	120
TGGCTGGCGG	CGTGCCCCBG	BBCGBGBCCC	GBCCGBCBG	GCCGTGGTTG	GGGGTCTTCG	180
CTGCCTCCGT	TTGGGTGGCG	ATCTCTGAAT	ATTGACCTTC	CATGGCGGTC	CTGCTTGGAG	240
BTCTCTGGBT	BTTGBCCTTC	CBTGGCGGTC	CTGCTTGGBT	CGTTCCTCTC	G	291

(2) INFORMATION FOR SEQ ID NO:1711:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1711:  
BGBBCGBGBC

10

(2) INFORMATION FOR SEQ ID NO:1712:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1712:  
TGBBTBTTGB

10

(2) INFORMATION FOR SEQ ID NO:1713:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 171 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1713:

TCTCCCTTGG GCTCTGGCTC CTTCTCTCTC TCTCCCTCTC TCTCTGTGCG CTCCGCCCTG 60  
 GCTGCTGGGG TGGTGGTGCT TTTGTTCTTC CTTGTGCGCG CCCCGCTGCT TGTCTTCCTC 120  
 GCTCTGTCCC TCTCTCTCTG TBCTCCTCBG GCTCCBTCBT CTCCCTTGGG C 171

(2) INFORMATION FOR SEQ ID NO:1714:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1714:

GGCTCTGGC

9

(2) INFORMATION FOR SEQ ID NO:1715:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 7 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1715:

CCCTTGG

7

(2) INFORMATION FOR SEQ ID NO:1716:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1716:

TTTGTCTTC C

11

(2) INFORMATION FOR SEQ ID NO:1717:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 123 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1717:

CTTGCTCCTG GGGGCCTCCT GGTCCCTCCG GGTGTTCCCG GCGGGCCTGG CCTGGGGCBG 60  
 GGGCCGCGTB GGCGCGGCTC GCCBGGBCGG GCBGCGCCBG CBGCBGCBGB TTCBGCBTCC 120  
 TGG 123

(2) INFORMATION FOR SEQ ID NO:1718:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 14 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1718:

GCTCCTGGGG GCCT

14

(2) INFORMATION FOR SEQ ID NO:1719:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1719:

CGTBGGCGC

9

(2) INFORMATION FOR SEQ ID NO:1720:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1720:

TGGCCTGGGG

10

(2) INFORMATION FOR SEQ ID NO:1721:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 132 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1721:  
CTTGCTCCTG GGGCCTCCT GGTCCCTCTG GCTGTTCCCG GCCCTGGGCT GGGGCBGGGG 60  
CCGCGTBGGC GCGGCTCGCC BGGBCGGGCB GCGCCBGCBG CBGCBGGCTC BGCBTCTCTG 120  
CCBCGGBBTT CC 132

(2) INFORMATION FOR SEQ ID NO:1722:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1722:  
CTCCTGGGGG CCTCCTG 17

(2) INFORMATION FOR SEQ ID NO:1723:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1723:  
BTCCTGGCCB CGGBBTTCC 19

(2) INFORMATION FOR SEQ ID NO:1724:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1724:  
GTCCCTC 7

(2) INFORMATION FOR SEQ ID NO:1725:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 180 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1725:  
GGTGTGCGGG GCCTGGTGCC CCTGGGCCTC GGGTGCTGCC TGTGCGCTGC CTTCTTCTCC 60  
TGGGTCTCTG CCGGGGCCCT TGCTGCCCTG GCTGTGCCCT GGGGGTCTGG GTTCGGCTGT 120  
CCCCBGCBBG BCCBGTCCCB TCCBCGCGT GTGBTGBGTB GCCBTCTCTC TGCBCCCGBG 180

(2) INFORMATION FOR SEQ ID NO:1726:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1726:  
TTCTCTGCB GCCGBG 16

(2) INFORMATION FOR SEQ ID NO:1727:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1727:  
CTTGCTGCCC TGGCTGT 17

(2) INFORMATION FOR SEQ ID NO:1728:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1728:  
TCTTCTCTG G 11

(2) INFORMATION FOR SEQ ID NO:1729:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 101 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1729:  
GGGCGCGGGC GBGCBTCGCT TTGGGCTTTT CTCCTTTGGT TTGBGCGCCB GGBCCGCGCB  
CBGCBGCBGG GCGCGGGCGB GCBTCGCBGC GGCGGGCBGG G

60  
101

(2) INFORMATION FOR SEQ ID NO:1730:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1730:  
GGCBGGG

7

(2) INFORMATION FOR SEQ ID NO:1731:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1731:  
TCCTTTGGTT

10

(2) INFORMATION FOR SEQ ID NO:1732:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 81 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1732:  
CCTCCTTCCT GGTCTGTCTG CCBGBCBBBT TTGGGBBGTG BCBGTTTTG GBBCCBTGTT  
TCCCBGTCTC TGBGCTGTGG C

60  
81

(2) INFORMATION FOR SEQ ID NO:1733:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1733:  
TTCTCCTTTG GTT

13

(2) INFORMATION FOR SEQ ID NO:1734:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1734:  
TTTCTCCTTT GGTT

14

(2) INFORMATION FOR SEQ ID NO:1735:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 156 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1735:  
GCCCTGCTGC TCTTCTGCT TCCCTTGGTG GGTGGGGCCG CTGGTTGTTT TGGGGTTCTT  
GCTGCCCTT CTGTCCCTGT TTGCTGGTGT CTGCGCCCCC BCBGBBBGBB GCBGBCBBBT  
TTGGGBBGTG BCBGTTTTG GBBCCBTGTT TCCTGT

60  
120  
156

(2) INFORMATION FOR SEQ ID NO:1736:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1736:  
TTCCTGT

7

(2) INFORMATION FOR SEQ ID NO:1737:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1737:  
CTCTTTCTGC T

11

(2) INFORMATION FOR SEQ ID NO:1738:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1738:  
CCCCTTCTGT CCC

13

(2) INFORMATION FOR SEQ ID NO:1739:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 272 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1739:  
GCGCTCGGCC TGGTCCCGGG GGTCTCTCT TGTGTTGCT TGCGCCTCCT GCTGGGGGTC 60  
CCTCTGTTCT TGTTTTGGGG GCGGGCCCGG CCGTTGTCTT GGTGTTGGGGG TTTCCGTTGG 120  
GGTCTCCTTG GCCCGGGCCT TGCCCGGCCG TGGTCCCGGC TTCGTTCTTG TCTCCGTCTC 180  
GGCTCTTCTG GGGCCTTGCG CTGTCTTTGG TGGCBCCGTC CBGTGBTGGT GCGGTBCTTG 240  
TCGCTGCBGC GCTCGGCCTG GTCCCGGBGB GC 272

(2) INFORMATION FOR SEQ ID NO:1740:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1740:  
TCGGCCTGGT CCCGG

15

(2) INFORMATION FOR SEQ ID NO:1741:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1741:  
TGGGGGTTTC CGTTG

15

(2) INFORMATION FOR SEQ ID NO:1742:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1742:  
TGGTCCCGGB GBGC

14

(2) INFORMATION FOR SEQ ID NO:1743:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 360 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1743:  
GCGCGGGCCG GGGGCTGCTG GGGGTTGGCC CGGGGTGCCG CGCCGCTGGG TGCCCTCGTC 60  
CTCTGCGGTC GTGTCTCCTG GCTCTGGTTC CCCGCTGCGC CCGTTGTCCT CTGGGGTGGC 120  
CTTCGCTCCC GGGTCTGGTT CTTGTGTTGG GGGTCCCTTT TTGGGCTGTG TGTGGCGTGG 180  
CTTGTGTGTT CGGTTTCTGC CCGTCTCTCC GCGTCCCGG GBGCCTCCCC GGGGCBGGBT 240  
GBCTTTTGBG GGGGBCBCBG BTGTCTGGGC BTGCCCBBGT CCTGGGBBCB GBGCCCCGBG 300  
CBGGBCCBGG BTGCGGGCB GCGCGGGCCG GGGGCTGCTG GGBGCCBTBG CGBGGCTGBG 360

(2) INFORMATION FOR SEQ ID NO:1744:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1744:  
GGGGGCTGCT GGG 13

(2) INFORMATION FOR SEQ ID NO:1745:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1745:  
TGTCCTCCGG CGTCCC 16

(2) INFORMATION FOR SEQ ID NO:1746:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1746:  
GCCBTBGCGB GGCTGBG 17

(2) INFORMATION FOR SEQ ID NO:1747:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1747:  
CTCTGGGGTG GCCTTC 16

(2) INFORMATION FOR SEQ ID NO:1748:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 242 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1748:  
CCTCTTTTCT GTTTTTCCC TCTGCCTTG TTTGGGTTTCG CTTCTTTCT GCTTCTTCCC 60  
TGTGTCTCCT GTCTCCGCTT TTTCTTCGT CTTTGTGTT TTCTCTCCT TGCTGBGCBB 120  
GBTBTCTBGB TTCTGGGGTG GTCTCGBTTT TBBBGGCTTG BGBBGCTGCB BBCBTTBTCC 180  
BBBGTBTBTT TGBGGCTCCB BGGBTCBGB CCBTCTTCCC BGGCBTTTB BGTGCTGTC 240  
GT 242

(2) INFORMATION FOR SEQ ID NO:1749:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1749:  
CTGTCGT 7

(2) INFORMATION FOR SEQ ID NO:1750:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1750:  
TGCTTCTTCC 10

(2) INFORMATION FOR SEQ ID NO:1751:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 249 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1751:  
BBGTGBGBGC TGBGBGBBC TGTGBGCBB TCBTGBCTTC BBGBGTTCTT TTCBCCCGTT 60  
CTTGGCTTCT TCTGTCCGTT GGCTTCTCGT TGTCCTGTG GGCTTCTCGT TGTCCTCCCT 120  
TCGGGGGCTG GTGGGGCCGT CCTTGCCTGC TGGGTTCTTG GCTTCTTCTG TCCGTTGGCT 180  
TCTCGTTGTC CCTGTGGGCT TCTCGTTGTC CCCCCTTCGG GGGCTGGTGG GGCCGCTCCTT 240  
GCCTGCTGG 249



(2) INFORMATION FOR SEQ ID NO:1752:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1752:  
CCTTGCCTGC TGG

13

(2) INFORMATION FOR SEQ ID NO:1753:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1753:  
GTTGTCCC

8

(2) INFORMATION FOR SEQ ID NO:1754:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 77 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1754:  
TTTTCTCTTT CGCTTTCTTT TCGTCTCCTG TTCCTCCTTT TTTGCTGTTT TTTCTCCTTC  
TTCTCTCCTT TCTTTTC

60  
77

(2) INFORMATION FOR SEQ ID NO:1755:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 12 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1755:  
TCCTTTCTTT TC

12

(2) INFORMATION FOR SEQ ID NO:1756:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1756:  
CTCCTTTT

8

(2) INFORMATION FOR SEQ ID NO:1757:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 77 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1757:  
TTTTCTCTTT CGCTTTCTTT TCGTCTCCTG TTCCTCCTTT TTTGCTGTTT TTTCTCCTTC  
TTCTCTCCTT TCTTTTC

60  
77

(2) INFORMATION FOR SEQ ID NO:1758:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1758:  
CCTTTCTTTT C

11

(2) INFORMATION FOR SEQ ID NO:1759:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: lin ar  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1759:  
CTGTTCTCCTCC TTTT

14

(2) INFORMATION FOR SEQ ID NO:1760:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 126 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1760:  
CTCTGTCTTG TTCTGGTCCT TCGTGGGGCT CTGTGTCGCG TGGGTGCGGC CGTGGCCGGC 60  
GGBCCBGGBG TTGGBGCBGG BGCBBGBCGG GCBGGCGGCT CBTGTTTGGT TCGGCBGGBG 120  
GCBCTC 126

(2) INFORMATION FOR SEQ ID NO:1761:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1761:  
GGBGGCBCTC 10

(2) INFORMATION FOR SEQ ID NO:1762:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 11 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1762:  
GTGGGGCTCT G 11

(2) INFORMATION FOR SEQ ID NO:1763:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 648 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1763:  
TCTGGGGTGT CCTGGCCTTC GTGGTTCCTC TTCCTTCGTT TGCCGTCCGC GGGGGCCCCC 60  
GGGCCTGGCT GCGCTCCTGC CCCGCCTCTT TCCCGGGCTC TTGCGCTGGG GGGTGCTCCC 120  
GTGTGTTTGC GCCCTCCTCC TGGTCGCGCT TGTCGTTTTG GGGCCGGCTT TGCCCGCCTC 180  
CCGGCGCCTG GCCCGGCCTT CCTGGGCTGC GTGCGCGTTC TGTCTCTTCTT CCTGGCTCTG 240  
GGGTGTCCTG GCCTTCGTGG TTCCTCTTCC TTCGTTGCC GTCCGCGGGG GCCCCCGGGC 300  
CTGGCTGCGC TCCTGCCCCG CCTCTTTCCC GGGCTCTTGC GCTGGGGGGT GCTCCCGTGT 360  
GTTTGCGCCC TCCTCCTGGT CGCGCTTGTC GTTTTGGGGC CGGCTTTGCC CGCCTCCCGG 420  
CGCCTGGCCC GGCCTTCCTG GGCTGCGTGC GCGTTCTGTT CTTCTTCCTG GCGCAGGAGA 480  
CAGGGCAGGG CGATCAGGAG CAGCGTGAGC CAAAGGAGGA CCATCGGGAA CGCAGCTCCG 540  
GAACGCAGGA CAGAGGTGCC GCBGGBGBCB GGGCBGGGCG BTCBGGGBCB GCGTGBGCCB 600  
BBGGBGBGCC BTCGGGBBCG CBGCTCCGGB BCGCBGGBCB GBGGTGCC 648

(2) INFORMATION FOR SEQ ID NO:1764:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1764:  
GBGGTGCC 8

(2) INFORMATION FOR SEQ ID NO:1765:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1765:  
GCCCCGC 7

(2) INFORMATION FOR SEQ ID NO:1766:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 88 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1766:  
CTCTGGTTGG CTTCTTCGC CGGCBCTGC TBGCBGGBBG BBCBGBGGGG GBBGCBGTTG 60  
GGBGGTGBGB CCCBTTBBTB GGTGTCGB 88

## (2) INFORMATION FOR SEQ ID NO:1767:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1767:

GCCGGCBCEB

9

## (2) INFORMATION FOR SEQ ID NO:1768:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1768:

TTCCTTC

7

## (2) INFORMATION FOR SEQ ID NO:1769:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 562 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1769:

TCTGCCCTGT	CCGCCGGCTC	TCGGTGGCT	CGGCCCGCT	CCTTGTCTTG	CCGCGGGTTG	60
GTTCTCTGGG	CTGGTTCTTG	CGGGCGTTTC	GGTCTGCTGG	CTGGTCTGGG	CCCGCGGTGC	120
GGCGGGTGGC	TTGCTGTTCT	GCCTGGGCTC	TCCCCTCTCC	TCCTTTTCTC	CCTTCCTCTG	180
TCTTGCTCTC	TTCCTCTGGG	TCCTCTTGGC	CTGGGCGCTC	TTCCCCTCGG	GCGGCTGCGG	240
GCGCTCGTGC	TGCCTGGTCC	GCTCCCTGGG	GGTGCTCCTT	CCCTTTCCCC	GCTCGTGGGG	300
TTTGCGGGGG	TGGGCTGCCC	TGGGGGGTCT	GGGCTTTTTC	GGGTCGGCTG	GCTGCTGCTT	360
CGGGCCGCGT	GGGCTTCCCT	GTGCCCTTTT	CCTCTGCTGG	GTCCCCCTCC	CGTTCCAAGC	420
TGCACCGCAC	AGACCGGCGC	TACAGGACAG	AGCCAGGCAA	GCACCCATGG	GGATCCAGGC	480
CCAGCTGTTC	CBGCTGCBBC	CGCBGBGCC	GGCGCTBCBG	GBCBGBGCCB	GGCBGBGCCB	540
CBTGGGGBTC	CBGGCCCBGC	TG				562

## (2) INFORMATION FOR SEQ ID NO:1770:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1770:

TCTGCGC

7

## (2) INFORMATION FOR SEQ ID NO:1771:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1771:

CCTGCTCTG GGG

13

## (2) INFORMATION FOR SEQ ID NO:1772:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 257 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1772:

TCCCTGTTTC	CCCCCTTTCG	TTCTGCGTTT	GCCTTTGGCG	TTTTTTGTTT	GTTTTCTCTC	60
TCCGCTTTTC	TTCTCCCTCG	TGGGBBTTTC	TGTGGGGBTG	GCBTBCBCGT	BGGCBGCTCC	120
BBGBGCTBGC	BBBCTCBBBT	GCBGBBGCBT	CCTCBTGGCT	CTGBBBCCGT	GGGAATTTCT	180
GTGGGGBTGG	CATACACGTA	GGCAGCTCCA	AGAGCTAGCA	AACTCAAATG	CAGAAGCATC	240
CTCATGGCTC	TGAAACG					257

## (2) INFORMATION FOR SEQ ID NO:1773:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1773:

GCCCCGGG

8

## (2) INFORMATION FOR SEQ ID NO:1774:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1774:

GGGTTTCT

8

## (2) INFORMATION FOR SEQ ID NO:1775:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1775:

GTGGGGBTGG C

11

## (2) INFORMATION FOR SEQ ID NO:1776:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1776:

CCBBGBGCTB GC

12

## (2) INFORMATION FOR SEQ ID NO:1777:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 89 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1777:

GTGGGAATTT CTGTGGGGBT GGCATACACG TAGGCAGCTC CAAGAGCTAG CAAACTCAA  
TGCAGAAGCA TCCTCATGGC TCTGAAACG

60

89

## (2) INFORMATION FOR SEQ ID NO:1778:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 249 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1778:

CTCAGTGGCC CCCAAAAGGA TGAGTAATAC ATGCGCCACG ATGATCATAT CCTTTTACT  
ATGAGGCCGT GTCTGTCGT TCTTTCCTT GCTCTTGGT TGTCTTTGCT GTGCCCTGCC  
TCTCTGCCC GTCTGTCTG TCTTTCCTT TGCTCTTGGT GTGTCTTTGC TGTGCCCTGC  
CTCTCTGCC GTGTCTGTC TGTCTTCTT TTGCTCTTGG TGTGTCTTTG CTGTGCCCTG  
CCTCTCTGC

60

120

180

240

249

## (2) INFORMATION FOR SEQ ID NO:1779:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1779:

CCGTGTC

7

## (2) INFORMATION FOR SEQ ID NO:1780:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1780:

GCCCTGCC

8

## (2) INFORMATION FOR SEQ ID NO:1781:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 66 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1781:  
CTCBGTGGCC CCCBBBGGG TGBGTBBTBC BTGCGCCBCG BTGTCBTBT CCTTTTBTCT  
BTGBGG

60  
66

(2) INFORMATION FOR SEQ ID NO:1782:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 869 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1782:

GGGGGTGGCT TCCTGCCGCG TCTCTGGGCC GTCCCGTCCC TCGGCCCCGC GCCGCGCTCG 60  
GCTCCTCTCC CTCTGGCCCG GCTCGGGGCG GGGCGGGGCG GTGGGCGGGC GGCGCTGCCC 120  
TGCGCGCGGC GCTGGCCCT GCTGGCCGTC GGCTGCGCGC TGCTGGCTGC CCTGCTGGCC 180  
GCGCCGGGCG CTGTCCGCT CTGCGGGGCG TGTCTCTGG CTTGTCTTCC GGCTCTTCTG 240  
CTGGGGTGGG GCTGGGCGGC CGGCCCGGTG CTGGGGCTCC TCGGGGGGGG GGGCTCTTCC 300  
GGGCTGTCTC CCTCCGGGGC GGGGGTTTCT GGCCGTGGGG GTCTTGCCCTG GCCTCCGGGC 360  
TCCTGCTTGT CTGCGCTTCC TTCTCTGGTC GGTGTGGCT CGGGGCTCCG TGGGTCCCTG 420  
GCGCCCGTTT GTGTTTGTG TTTTCCCTG CGGTCCCTGT GCCCTCTCC TCTCCTTCT 480  
CTGCTTCTCG CTCTCCTTTG TGGGGCCCTC CCTGCTGCTC TTGGTTTTGG GCTTTTTTTC 540  
TCTTCCTCCT TTTTCGTGCG TGGGCCCTCG CACGCTCTT GCCACCTCCT GCGCAGGGCA 600  
GCGCCTTGGG GCCAGCGCCG CTCCCGGCGC GGCCAGCAGG GCAGCCAGCA GCGCGAGCC 660  
GACGGCCAGC ATGCTTCCTC CTCGGCTACC ACTCCATGGT CCCGAGAGG CCGACAGGCG 720  
CBGCGCTCTT GCCBCCTCCT GCGCBGGGCB GCGCCTTGGG GCCBGGCGCC CTCCGGGCGC 780  
GGCCBGBGG GCBGCCBGB GCGCGCBGCC GBCGGCCBGC BTGCTTCTC CTCGGCTBCC 840  
BCTCCBTGGT CCCGCBGBGG CGBCBGGG 869

(2) INFORMATION FOR SEQ ID NO:1783:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1783:

GCBGCCBGB GCG

13

(2) INFORMATION FOR SEQ ID NO:1784:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1784:

CGCBGCCBGC GGCC

14

(2) INFORMATION FOR SEQ ID NO:1785:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 869 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1785:

GGGGGTGGCT TCCTGCCGCG TCTCTGGGCC GTCCCGTCCC TCGGCCCCGC GCCGCGCTCG 60  
GCTCCTCTCC CTCTGGCCCG GCTCGGGGCG GGGCGGGGCG GTGGGCGGGC GGCGCTGCCC 120  
TGCGCGCGGC GCTGGCCCT GCTGGCCGTC GGCTGCGCGC TGCTGGCTGC CCTGCTGGCC 180  
GCGCCGGGCG CTGTCCGCT CTGCGGGGCG TGTCTCTGG CTTGTCTTCC GGCTCTTCTG 240  
CTGGGGTGGG GCTGGGCGGC CGGCCCGGTG CTGGGGCTCC TCGGGGGGGG GGGCTCTTCC 300  
GGGCTGTCTC CCTCCGGGGC GGGGGTTTCT GGCCGTGGGG GTCTTGCCCTG GCCTCCGGGC 360  
TCCTGCTTGT CTTGCCTTCC TTCTCTGGTC GGTGTGGCT CGGGGCTCCG TGGGTCCCTG 420  
GCGCCCGTTT GTGTTTGTG TTTTCCCTG CGGTCCCTGT GCCCTCTCC TCTCCTTCT 480  
CTGCTTCTCG CTCTCCTTTG TGGGGCCCTC CCTGCTGCTC TTGGTTTTGG GCTTTTTTTC 540  
TCTTCCTCCT TTTTCGTGCG TGGGCCCTCG CACGCTCTT GCCACCTCCT GCGCAGGGCA 600  
GCGCCTTGGG GCCAGCGCCG CTCCCGGCGC GGCCAGCAGG GCAGCCAGCA GCGCGAGCC 660  
GACGGCCAGC ATGCTTCCTC CTCGGCTACC ACTCCATGGT CCCGAGAGG CCGACAGGCG 720  
CBGCGCTCTT GCCBCCTCCT GCGCBGGGCB GCGCCTTGGG GCCBGGCGCC CTCCGGGCGC 780  
GGCCBGBGG GCBGCCBGB GCGCGCBGCC GBCGGCCBGC BTGCTTCTC CTCGGCTBCC 840  
BCTCCBTGGT CCCGCBGBGG CGBCBGGG 869

(2) INFORMATION FOR SEQ ID NO:1786:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1786:

GGGGCBGG

8

## (2) INFORMATION FOR SEQ ID NO:1787:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 13 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1787:  
GBBGGCBGCB GGC

13

## (2) INFORMATION FOR SEQ ID NO:1788:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1788:  
CCBGGBGCBC CCCC

14

## (2) INFORMATION FOR SEQ ID NO:1789:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1789:  
BGGGBGBBGG CBBC

14

## (2) INFORMATION FOR SEQ ID NO:1790:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 128 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1790:  
CTCCTGGGGG TBCTGGGGCB GGGBBGGCBG CBGGCBBCBC CBGGBGCBCG CCCBGGGBGB  
BGGCBBCCTGG BCCGBBGGCG CTTGTGGBGB BGGBTTCBT BGCTGGGCTC CTGGBGGGGG  
GBTBGBGC

60

120

128

## (2) INFORMATION FOR SEQ ID NO:1791:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 244 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1791:  
GGGGTGGBBB GGTTTGGBGT BTGTCTTTBT GCBCTGBCBT CTBBGTTCTT TBGCBCTCCT  
TGGCBBBECT GCBCCTTCBC BCBGBGCTGC BGBBETCBGG BBGGCTGCCB BGBBGGCCBC  
GGCCBGCTTG GBBGTCTGT TTBCBCBCBG TGBGTGTT CCTCCGGGC TTGTGTGCTC  
TGCTGTCTCT TGGTTCCTTC CGGTGTTTC TTCTGGCTC TTGTCTTTC TCTTGGCCCT  
TGGC

60

120

180

240

244

## (2) INFORMATION FOR SEQ ID NO:1792:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1792:  
GGBGTBTG

8

## (2) INFORMATION FOR SEQ ID NO:1793:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1793:  
GCBCTGBCBT CT

12

## (2) INFORMATION FOR SEQ ID NO:1794:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1794:  
CCGGTGG

(2) INFORMATION FOR SEQ ID NO:1795:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1795:  
GGCCCTTGGC

(2) INFORMATION FOR SEQ ID NO:1796:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 87 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1796:  
GGGGTGGBBB GGTTTGGBT BTGTCTTBT GCBCTGCBCT CTBBGTTCTT TBGCBCTCCT  
TGGCBBBCT GCBCTTCBC BCBGGC

(2) INFORMATION FOR SEQ ID NO:1797:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 489 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1797:  
GGGCTCCGCG CGCGGBGGT TBTGGGCTCC CBGGBCCBCC CGCBCCGCGC GGBCGTTTBC 60  
BTTCCGCCBG CBGTGCGCGG CCGCBTGBG GBBGTTGGGC GCBTBCBGGG TGGCGCCGCB 120  
GBBGTGGCCT CCGCGCBGCT GCBGGGBCBC CBTGBBGGGC CBCGCGTGGG GCCGCGCTCG 180  
CCGGCCCCCC BCBTCTCCG BGGCCBGGCG GGTGCCCCC BGCBCBBGG CCGGCBGGBC 240  
BCBGGCBBGG BGCBCBGGG GTCCGGCGGC GBGGGTCBTG GTGGGGCTGG GGCTCCGGGG 300  
TCTCTGCCCC TCCGTGCTGG TGGGGCTGGG GCTCCGGGGT CTCTGCCCCT CCGTGCCGCG 360  
TGGGGCCGCG CTCGCCGGCC CCCCCCTGCC GGGTGGGCTC CCGCCGCGCG CCGGCCTGCC 420  
GGCCCTCGT GGGTCTGCT GGCCGGGTCC GGGTCCCGG GGTGGGGCGC GBGTGCGCGG 480  
CCBGGGGTC 489

(2) INFORMATION FOR SEQ ID NO:1798:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 8 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1798:  
GGTGGGGC

(2) INFORMATION FOR SEQ ID NO:1799:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 7 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1799:  
GGGGCCG

(2) INFORMATION FOR SEQ ID NO:1800:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 13 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1800:  
GGCCGGGTCC GGG

(2) INFORMATION FOR SEQ ID NO:1801:  
(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 317 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear  
(ii) MOLECULE TYPE: Genomic DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1801:

GGGCTCCCCG	CGCGBGBGGT	TBTGGGCTCC	CBGGBCCBCC	CGCBCCGCGC	GGBCGTTTBC	60
BTTCCGCCBCG	CBGTGCGCGG	CCGBCBTGBC	GBBGTGGGGC	GCBBTCBGGG	TGGCGCCGCB	120
GBBGTGGCCT	CCGCGCBGCT	GCBGGGBCBC	CBTGBBGGGC	CBCGCGTGGG	GCCGCGCTCG	180
CCGGCCCCCC	BCBBTCTCCG	BGGCCBGCBC	GGTGCCCCC	BGCBGCBGGG	CCGGCBGGBC	240
BCBGGCGBGG	BGBCBGCGB	GTGCGCGGCC	GBGGGTCBTG	GTGGGGCTGG	GGCTCCGGGG	300
TCTCTGCCCC	TCCGTGC					317

## (2) INFORMATION FOR SEQ ID NO:1802:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 308 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

## (ii) MOLECULE TYPE: Genomic DNA

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1802:

CGGGBGTGGG	GGTCTGGBC	GGCBCTGBBG	GCBTCCBGGG	CTCCCTTCB	GTCCTTCTTG	60
TCCGCTGCCB	GCBCCCCTTC	BTTCCBGBGG	CTGBTGGCCT	CCBCCBGGGB	CBTGBTTBGG	120
TBGBBBCTBG	GBGGCCGGCC	TCCBCCBGGG	BCBTGGTCCT	TCTTGTCGCG	TGCCTCTCTG	180
GGGTTTTCGG	TCTGGGTGGG	CTTTCCTCCT	GGGGCTGCTG	CTGGGCTCTT	CTTTTGTGTT	240
CTGGCCTGGT	GCTCTCTCGT	GCCCTTTCCC	TTGGGTGTCT	TGTTTTTGTG	GCCTCCBCCB	300
GGGBCTG						308

## (2) INFORMATION FOR SEQ ID NO:1803:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1803:

CGGGBGTGGG GG

12

## (2) INFORMATION FOR SEQ ID NO:1804:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1804:

GCCBGCBCCC C

11

## (2) INFORMATION FOR SEQ ID NO:1805:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1805:

CCBCCBG

7

## (2) INFORMATION FOR SEQ ID NO:1806:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 136 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1806:

CGGGBGTGGG	GGTCTGGBC	GGCBCTGBBG	GCBTCCBGGG	CTCCCTTCB	GTCCTTCTTG	60
TCCGCTGCCB	GCBCCCCTTC	BTTCCBGBGG	CTGBTGGCCT	CCBCCBGGGB	CBTGBTTBGG	120
TBGBBBCTBG	GBGGCC					136

## (2) INFORMATION FOR SEQ ID NO:1807:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 233 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1807:

CCCTCCBCBT	CTGCTCTGBC	CTGCTGGBCT	CTGGBTCTGB	BGBTBCGCCB	TGTBGGGGCG	60
GGBTGGGGG	CTGCTCTCCC	GGCCTCCGBT	GBTCTCCCT	GCCTCBGCCC	CBGTGGGTBG	120
GBGBBBGGCC	BGCBGBBGC	GBBGTGGCTG	CBTCTTTTCT	GGTGGGGCCT	GCTCTCCCGG	180
CCTCCGTGTG	TTGCTGGGTG	TTTTCCCGTC	TCTGGTCTGC	CTTCGGGGGT	CGT	233

## (2) INFORMATION FOR SEQ ID NO:1808:

## (i) SEQUENCE CHARACTERISTICS:



- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1808:  
GBBGBTBCCG C

11

(2) INFORMATION FOR SEQ ID NO:1809:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1809:  
CBGCCCCBG

9

(2) INFORMATION FOR SEQ ID NO:1810:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1810:  
TCCCGTCTCT GG

12

(2) INFORMATION FOR SEQ ID NO:1811:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 150 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1811:  
CCCTCCBCBT CTGCTCTGBC CTGCTGGBCT CTGGBTCTGB BGBTBCGCCB TGTBGGGGCG 60  
GGBGTGGGGC CTGCTCTCCC GGCCTCCGBT GBTCTCCCCT GCCTCBGCCC CBGTGGGTBG 120  
GBGBBBGGCC BGCBBBGGCB GGBGTGGCTG 150

(2) INFORMATION FOR SEQ ID NO:1812:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 222 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1812:  
CCGGGGCTGC BGCBBCTCB TCBGCTCTTG CCTGGBGTGG CTCBGCCTGG GCCTGCBGGG 60  
CCBCCBGGBG BBTGGCBGCB BGGBTGGCB GGGTCCTCBT GGCTGGGGTC BCBGTCCTC 120  
TBGCTBGGCB GGGTBCCBG BGBGGCGGG TCCTBTGGC TGGGGCCTG GGCCTGCBGG 180  
GCCGCTCTTG CCTGGBGTGG CTCGCCBGB GTCTTCCCTG GT 222

(2) INFORMATION FOR SEQ ID NO:1813:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1813:  
CCGGGGC

7

(2) INFORMATION FOR SEQ ID NO:1814:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1814:  
GGGCCTGCBG GGCC

14

(2) INFORMATION FOR SEQ ID NO:1815:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1815:  
GGCBGCBBGG

10

## (2) INFORMATION FOR SEQ ID NO:1816:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 147 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1816:

CCGGGGCTGC BGCBBCTCB TCBGCTCTTG CCTGGBGTGG CTCBGCCTGG GCCTGCBGGG 60  
 CCBCCBGGBG BBTGGCBGCB BGGBTGGCGB GGGTCTCTBT GGCTGGGGTC BCBGTCCTC 120  
 TBGCTBGGCB GGGTGBCCBG BGBGGGC 147

## (2) INFORMATION FOR SEQ ID NO:1817:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 180 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1817:

CGCTGCBBTC TGCTCCGGGG CTGCBGCBBC CTCBTCBGCT CTTGCCTGGB GTGGCTCBGC 60  
 CTGGGCCTGC BGGGCCBCCB GGBGBBTGGC BGCBBGGBTG GCGBGGGTCC TCBTGGCTGG 120  
 GGTCBCCTGG BGGBGGGBGB GCBGGGGGTC CTCBTGGCTG GGGTCCCTCT CTCCCGTCCT 180

## (2) INFORMATION FOR SEQ ID NO:1818:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1818:

GGCBGCBGGG 10

## (2) INFORMATION FOR SEQ ID NO:1819:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1819:

GGCTGGGG 8

## (2) INFORMATION FOR SEQ ID NO:1820:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1820:

GGGGTCBCC 9

## (2) INFORMATION FOR SEQ ID NO:1821:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 145 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1821:

CGCTGCBBTC TGCTCCGGGG CTGCBGCBBC CTCBTCBGCT CTTGCCTGGB GTGGCTCBGC 60  
 CTGGGCCTGC BGGGCCBCCB GGBGBBTGGC BGCBBGGBTG GCGBGGGTCC TCBTGGCTGG 120  
 GGTCBCCTGG BGGBGGGBGB GCBGG 145

## (2) INFORMATION FOR SEQ ID NO:1822:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 374 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1822:

GTCTTTGTTT CTGGGCTCGT GCCCCBTCCC GGCTTCTCTC TGGTTCGGTC CTCTGTGGTG 60  
 TTTGGCCCTG CTTCTTTTG CCTGTTGAGG GGGCAGCAGT TGGGCCCAA AGGCCCTCTC 120  
 GTTCACCTTC TGGCAGGAG TTGCATCCCC ATAGTCAAAC TCTGTGGTCG TGTCATAGTC 180  
 CTCTGTGGTG TTTGGAGTTT CCATCCCGGC TTCTCTCTGG TTCCAAGGA GBGGGGGCBG 240  
 CBGTTGGGCC CBBBGGGCC TCTCGTTCBC CTTCTGGCBC GGBGTTGCBT CCCCBTBGTC 300  
 BBBCTCTGTG GTCGTGTCBT BGTCTCTGT GGTGTTTGGT GTTCCBTCC CGGCTTCTCT 360  
 CTGTTCCBB GGG 374

## (2) INFORMATION FOR SEQ ID NO:1823:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1823:

GGGCCCC

7

## (2) INFORMATION FOR SEQ ID NO:1824:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1824:

GGGGGCBGC

9

## (2) INFORMATION FOR SEQ ID NO:1825:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1825:

CCCGGCTTC

9

## (2) INFORMATION FOR SEQ ID NO:1826:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 303 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1826:

GGGCBCGGGG	CBGTGGGCGG	GCBTGTBGG	CBBBGCBCB	GGGTGTGGTG	TCCBGGBBT	60
BTGGGGBGGC	BGTGCBGGB	GCGCBGCGG	CBGTBGCBBT	GBGGTGBCB	GCGBGGCGTG	120
CCGCGGBGBC	CTTCBTGGTB	CCTGTGGBGB	GGCTGTCGGB	GGGGGTGTGG	TGTCCGCTTG	180
GCGTTCTTT	CGGGTGTTC	TTCTCTGGGT	TGGCCTGCTG	CTCGTCGTGG	TCGCTCCGCT	240
CCCGGGTTCG	TCTCGCTCTG	TCGCCCTTC	CTTCCTTGTC	GTGTTCTCC	CTTCCTTGCC	300
TCT						303

## (2) INFORMATION FOR SEQ ID NO:1827:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1827:

GGGTTGGC

8

## (2) INFORMATION FOR SEQ ID NO:1828:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1828:

CGGGGCBG

8

## (2) INFORMATION FOR SEQ ID NO:1829:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1829:

CCCGGGTTCG

10

## (2) INFORMATION FOR SEQ ID NO:1830:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1830:

GGGTGTGGTG

10

## (2) INFORMATION FOR SEQ ID NO:1831:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 162 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1831:

GGGCBGCGGG CBGTGGGCGG GCBTGTBGG CBBGCBGCB GGGTGTGGTG TCCGBGGBBT 60  
 BTGGGGBGGC BGBTGCBGB GCGCBGBGG CBGTGCBBT GBGGBTGCB GCGBGGCGTG 120  
 CCGCGGBGBC CTTCTGTGTB CCTGTGGBB GGCTGTGCGB GG 162

## (2) INFORMATION FOR SEQ ID NO:1832:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 213 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1832:

GCTGCCCGGC GGGGTGTGCG CTTGGCGCTC CCGTGCTCGG TTCTCTGTCT CCCGGTCCCC 60  
 CTTGCCTGGC GTCTCGGGCC TTCGTCTCT TCCTCTCTT CCTTCCGCTC CGTGGGGGCT 120  
 GCTTGTGGG GGCCTGTGCC TCGGGGTCCC GGGGCTTCTG GCCCTTGCCG TTCATGGTGG 180  
 CTAGGTGGGG CGTTCBTGGT GGCTBGGTGG GGC 213

## (2) INFORMATION FOR SEQ ID NO:1833:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1833:

GGTGGGGC

8

## (2) INFORMATION FOR SEQ ID NO:1834:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1834:

GCCCCGCGGG G

11

## (2) INFORMATION FOR SEQ ID NO:1835:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1835:

CGGGGCTTCT GGCC

15

## (2) INFORMATION FOR SEQ ID NO:1836:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 347 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1836:

GGGGTGGGTB GGCCGTGTCT GGGGGTTGGC CBTGTTGGT GCCTCTTGGT GGTGCGCCGG 60  
 GCGCGTCTTG GCTTTCTTCT CCTTCGGGCC CTCGGGCCGG TGCTTGTGGG CTCCTCCCGG 120  
 GCGGCCTCCC CGGGCGGGGG CTTCTTGGCG CTGGCGGGGG GGCTCTCTGC TCTGTGGCTG 180  
 GCGGTTCTT GGTGTTCTGG GTGGTGGCG GCGTGGTGGC CTCTGTGGGG GCCCGCGGCT 240  
 GCBGGGGTTG CTTGTCTGCT TCGTCCTTTG CGCTCCCGGG CCGCCGGGGT GGGTAGGCCG 300  
 TGTCTGGGGG TTGGCCATGT TGTTGCCGG GCCCGCGGCT GCAGGGG 347

## (2) INFORMATION FOR SEQ ID NO:1837:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1837:

CCCCGGCGG

9

(2) INFORMATION FOR SEQ ID NO:1838:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 12 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1838:  
 GGCGGGGGG CC

12

(2) INFORMATION FOR SEQ ID NO:1839:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 11 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1839:  
 CCGGGGCCG C

11

(2) INFORMATION FOR SEQ ID NO:1840:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 8 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1840:  
 GGCCGTGT

8

(2) INFORMATION FOR SEQ ID NO:1841:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 664 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1841:  
 CGGTTTCCTT TCGGGTCTTG GCCCGGGCTC CGGGTGCCCG CCCGCCCGCC GGCCGCCGCC 60  
 CCGCCGGGCT GTCCCCGCC CGCCCCGCC CGGGGCGCGG GGGCGGCCCT CCCGCCCTC 120  
 TGGGCCGCGG CCGGCGTCGG CCGCTCGCGC CTGGGGTTCC CTCTCCTCCC CCTGTGCGCC 180  
 TGCCTCTTGC TCTTCTGCGT CCGCTGCCTT CTCCCTCTC CTCGGCCGTT GCCTGTGCTG 240  
 TCCGTCTGT CGCCCTTCCG TGGTGCTGTT GTCTTTCTG CCTCGGTGT GCTGGTGCTG 300  
 GTGGTGGTGC CTCTGCCCCG GCTCGCCCTG CCTGGGCTGG CCTCTTCGGG TGTGGCTTTG 360  
 GGGCTCTCTT GGTGCCCCCT TCTTCTCGTG GTGCCTCTCC TCCCTGGCTT GGTGCTTGTC 420  
 TGGGGTGGTG CTCCTCTCCC TTTCCCTGCT GGCCGTTTGT CCTGTTTCT GTCTTCTCT 480  
 TTCCTCTGT TTCTCCGTTT GGCTTGCTGC TTGCGGGGCT GTCTCCCTG CCCCTGTGGG 540  
 CTTTCCCTGG TCCGGTCTTC TCCTTGGGGG TCGCCCTTCT TGGTGGGCTG GCTCGTCTGT 600  
 CTTTTCTCTT CCTGGGGGTG GCCGTTGTGG GCGGTGTGGT CCGCCTTGCC TCTGCTGGTC 660  
 TTTC 664

(2) INFORMATION FOR SEQ ID NO:1842:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 9 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1842:  
 GGCCCCGGC

9

(2) INFORMATION FOR SEQ ID NO:1843:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 13 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1843:  
 GCCGGCGCGG GCC

13

(2) INFORMATION FOR SEQ ID NO:1844:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 13 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1844:  
 GCCTGGGCTG GCC

13

(2) INFORMATION FOR SEQ ID NO:1845:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 11 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1845:  
 GGGGGTGGCC G 11

(2) INFORMATION FOR SEQ ID NO:1846:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 21 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1846:  
 GGGGGTGGCC GTTGTGGGCG G 21

(2) INFORMATION FOR SEQ ID NO:1847:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 266 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1847:  
 GTGTGTTGTT BCCBBBGCBT CBBGBBTBGC TTTGCTBTCT BBGGBTCBCB TTTBGBCBTB 60  
 GGBBBBCGCT GTBGGTCBGB BBGBTGTGCT TBCCTTCBCB CBGBGCTGCB GBBBTCBGGB 120  
 BGGCTGCCBB GBGBGCCBCG GCCBGCTTGG BGTCBTGTTT BCBCBCBGTG BGGTGCTCCG 180  
 GTGGCTTTTT GCTTGTGTGC TCTGCTGTCT CTGTTCTTC CGGTGTTTC TTCCTGGCTC 240  
 TTGTCCTTTC TCTGGCCCT TGGCCC 266

(2) INFORMATION FOR SEQ ID NO:1848:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 7 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1848:  
 GCTCCGG 7

(2) INFORMATION FOR SEQ ID NO:1849:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1849:  
 CBBGBBTBGC 10

(2) INFORMATION FOR SEQ ID NO:1850:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 15 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1850:  
 CBCBCBGTGB GGTGC 15

(2) INFORMATION FOR SEQ ID NO:1851:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1851:  
 BCCBBBGCBT CBBGBBTBGC 20

(2) INFORMATION FOR SEQ ID NO:1852:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 21 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1852:  
 GCCBBGBBG CCBGCGCCBG C 21

## (2) INFORMATION FOR SEQ ID NO:1853:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 196 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1853:

GBTGTTTGTT	BCCBBBGCBT	CBBGBBTBGC	TTTGCTBTCT	BBGGBTCBCB	TTTBGBCBTB	60
GGBBBBBCGCT	GTBGGTCBGB	BBGBTGTGCT	TBCCTTCBCB	CBGBGCTGCB	GBBBTCBGGB	120
BGGCTGCCBB	GBGBGCCBCG	GCCBGCTTGG	BGTCBTGTTT	BCBCBCBGTG	BGGTGCTCCG	180
GTGGCTTTTT	GCTTGT					196

## (2) INFORMATION FOR SEQ ID NO:1854:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 400 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1854:

ACAGGGGCTG	TAATCTTCAT	CTGCAGGTGG	CATGCCAGTG	AAATTTAGAT	CATCAAAATC	60
CCACATCTGT	GGATCTGTAA	TATTTGACAT	GTCCTCTTCA	GTTTCAGCAA	TGTTTTGATC	120
TAAGTGAAGC	ACCGGCCAGG	BCBGGGGCTG	TBBTCTTCBT	CTGCBGGTGG	CBTGCCBGTG	180
BBBTTTBGBT	CBTCBBBBTC	CCBCBTCTGT	GGBTCTGTBB	TBTTTGBCBT	GTCCTCTTCB	240
GTTTCBGCBB	TGGTTTGBTC	TBBCTGBBGC	BCCGGCCBGG	TGGCTCGGTG	CTTCTGCCCC	300
TGTTGTTCG	GCGCTCGGTT	GGTGTGGCCC	CTGTGGTGCT	TCGTTTCCCC	CTCTTTCTCT	360
TTGTTCCGGG	GTTCTTGTGG	CGGGCTGCTT	GTCTCGTTCC			400

## (2) INFORMATION FOR SEQ ID NO:1855:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1855:

CBGGGGC

7

## (2) INFORMATION FOR SEQ ID NO:1856:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1856:

GCBGGTGGC

9

## (2) INFORMATION FOR SEQ ID NO:1857:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1857:

GCGGCGCTC

9

## (2) INFORMATION FOR SEQ ID NO:1858:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 140 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1858:

ACAGGGGCTG	TAATCTTCAT	CTGCAGGTGG	CATGCCAGTG	AAATTTAGAT	CATCAAAATC	60
CCACATCTGT	GGATCTGTAA	TATTTGACAT	GTCCTCTTCA	GTTTCAGCAA	TGTTTTGATC	120
TAAGTGAAGC	ACCGGCCAGG					140

## (2) INFORMATION FOR SEQ ID NO:1859:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 140 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1859:

BCBGGGGCTG	TBBTCTTCBT	CTGCBGGTGG	CBTGCCBGTG	BBBTTTBGBT	CBTCBBBBTC	60
CCBCBTCTGT	GGBTCTGTBB	TBTTTGBCBT	GTCCTCTTCB	GTTTCBGCBB	TGTTTTGBTC	120

TBBCTGBBGC BCCGGCCBGG

140

## (2) INFORMATION FOR SEQ ID NO:1860:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 346 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1860:

CTTGBCBGG	BBGCTCTGGG	GCBGGGBGCT	GGCBGGGGCC	BGGGGGGTGG	CTTCCTGCBC	60
TGTCCBGBGT	GCBCTGTGCC	BCBGCBCBGC	CTGCBGGGCC	BTCBGCTTCB	TGGGGCTCTG	120
GGTGGCBGGT	CCBGCCTTGG	GTCTGGGTGG	GGCTGGGCTG	CBGGCTCCGG	GCGGTCCBGC	180
CBTGGGTCTG	GGGGCTGGGC	TGCBGGCTCC	GGGCGGGCGG	GTGCGGGCTG	CGTGCTGGGG	240
GCTGCCCCGC	AGGCCCTGCG	GTCCBGCCT	GGGTCTGGGG	GCTGGGCTGC	BGGTCCGGG	300
CGGGCGGGTG	CGGGCTGCGT	GCTGGGGGCT	GCCCCGACAG	CCCTGC		346

## (2) INFORMATION FOR SEQ ID NO:1861:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1861:

GBGCBGGBBG

10

## (2) INFORMATION FOR SEQ ID NO:1862:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1862:

GCCBCBGCBCB CBGC

14

## (2) INFORMATION FOR SEQ ID NO:1863:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1863:

GGGTGCGGGC

10

## (2) INFORMATION FOR SEQ ID NO:1864:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 172 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1864:

CTTGBCBGG	BBGCTCTGGG	GCBGGGBGCT	GGCBGGGGCC	BGGGGGGTGG	CTTCCTGCBC	60
TGTCCBGBGT	GCBCTGTGCC	BCBGCBCBGC	CTGCBGGGCC	BTCBGCTTCB	TGGGGCTCTG	120
GGTGGCBGGT	CCBGCCTTGG	GTCTGGGTGG	GGCTGGGCTG	CBGGCTCCGG	GC	172

## (2) INFORMATION FOR SEQ ID NO:1865:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 818 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1865:

GCBCCGCTG	GBGCCCTGGG	GCCCCCTGT	CTTCTTGGG	BGGCGCTCCT	CGGCCBGGCTC	60
CBGCTCCCG	BTCBTGCTTT	CBGTGCTCBT	GGTGTCTTT	CCBGGGGGBG	GBGGGGCTGG	120
TCCTCTGCTG	TCCTTGTCTG	TGCTCBTGGT	GTCCTTTCCG	CCCTGGGGCC	CCCCTGTCTT	180
CTTGGGGCCT	CTTCCCTCTG	GGGGCCGTCT	CTCTCCCTCT	CTTGCCTCTC	TCTCTTTCTC	240
TCTCTCTCTT	CCCCCTTCCC	GCTCTTTCTG	TCTCGGTGTC	TGGTTTCTCT	TCTCCGCTGG	300
CTGCCTGTCT	GGCCTGCGCT	CTTGGCCTGT	GCTGTTCCTC	CTCCGGTTCC	TGTCCTCTCT	360
GTCTGTGCGC	CCCTCTGGGG	TCTCCCTCTG	GGTGGTGGTC	TTGTTGCTTG	GGCTGGGCTC	420
CGTGTCTCCB	GTGCTCBTGG	TGTCCGCTGB	GGGBGCGTCT	GCTGGCGCTG	GTCTCTGCTC	480
GTCCTTGCTG	GTGCTCBTGG	TGTCCCTTCC	GCCCTGGGGC	CCCCCTGTCT	TCTTGGGGCC	540
TCTTCCCTCT	GGGGCCCGTC	TCTTCCCTCT	TCTTCCCTCT	CTCTCTTTCT	CTCTCTCTCT	600
TCCCTTTTCC	CGCTCTTTCT	GTCTCGGTGT	CTGTTTCTCT	CTCTCCGCTG	GCTGCCTGTC	660
TGGCCTGCGC	TCTTGGCCTG	TGCTGTTTCT	CCTCCGGTTC	CTGTCTCTCT	TGTCTGTCTC	720
CCCCTCTGGG	GTCTCCCTCT	GGCGTGGTGG	TCTTGTGCTG	TGGGCTGGGC	TCCGTGTCTC	780
CBGTGCTCBT	GGTGTCCGCT	GBGGGBGCGT	CTGCTGGC			818